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Medical & Surgical JOURNAL.

MENTALLY-DEFICIENT CHILDREN

MENTALLY-DEFICIENT CHILDREN:

THEIR TREATMENT AND TRAINING.

BY

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TO THE MEMORY OF

THE TRULY ILLUSTRIOUS

ÉDOUARD SÉGUIN, M.D.

WHO FOR FORTY-TWO YEARS,

BOTH IN THE OLD WORLD AND THE NEW,

PRACTICALLY AND WITH HIS PEN

LABOURED TO IMPROVE THE CONDITION OF

MENTALLY-DEFICIENT CHILDREN

BY THE APPLICATION OF

PHYSIOLOGY TO EDUCATION;

THIS BOOK IS INSCRIBED.

"*He loved others better than himself.*"

PREFACE.

IN offering this little Manual to the Medical Profession, and to the increasing number of the Public who take an interest in the special education of mentally-deficient children, the author trusts that the experience acquired by the proverbial "quarter-of-a-century's" successive residence in two of the largest Training Institutions for Imbeciles, may aid him in setting forth both the salient peculiarities of the class, and the ameliorative measures found most useful. He does not profess to bring forward much that is new, but rather to collect, and mould into book-form, various papers published by him during the last twenty years in Medical Journals and the Proceedings of Societies.

In the present volume, the pathology of the subject is only touched on to supply a few practical hints which may be of service to the medical man in his diagnosis, prognosis, and recommendations, when consulted in the case of a

mentally feeble or deficient child. Though his standpoint is that of the physician, and not of the teacher, the author hopes that his observations upon special educational methods, based as they are upon physiological principles, may not be without value to those engaged in the practical work of instruction. For the successful training of the mentally-deficient child the physician and the teacher must go hand in hand; and it will be a satisfaction to the author if in some slight degree this book realises the aspirations of Seguin—who was both. "Let us physicians," he says (in the course of an address to a New York Medical Society), "help to build the programme of physiological education, already sketched in the School for Idiots .... The demonstration therein given is that the physiological education of the senses is the royal road to the education of the intellect; experience, not memory, the mother of ideas."

Ancaster House, Richmond Hill.
***May*, 1895.**

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MENTALLY-DEFICIENT CHILDREN:

THEIR

TREATMENT AND TRAINING.

CHAPTER I.

HISTORICAL RETROSPECT.

BUT little more than fifty years have passed since serious and systematic efforts were first made to improve the condition of the mentally-deficient child. The labours of Seguin, at the Bicêtre Hospital in Paris, gave the earliest impetus to scientific work having for its object (in the words of Esquirol) "the removal of the mark of the beast from the forehead of the idiot." It is true that some essays had been previously made in France by Itard, Voisin, Esquirol, and others; and the experiments of Itard on the boy found running wild in the woods of Aveyron *(le sauvage de l'Aveyron)* of which he published an account in 1801, doubtless contributed materially to a rational understanding of congenital defects of intellect. In 1837 Seguin, an old pupil of Itard and Esquirol, commenced to instruct an idiot child, and after gaining some experience at the Hospital for In-

curables, he was appointed in 1842 to apply his method to the education of the idiot children of the Bicêtre. About the same date, Dr. Saegert, in Berlin, and Dr. Guggenbühl, in Switzerland, independently took in hand the ameliorative treatment of mentally-feeble children. The conspicuous success of the work of Guggenbühl in improving the condition of cretins by removing them from sequestered and shadowed alpine valleys to the sunshine of the summit of the Abendberg, made a great impression on philanthropists both in Europe and America, and demonstrated, as by an object lesson, the interdependence of physical and mental amelioration. Saegert seems to have laboured somewhat upon the lines of the instruction he had been accustomed to give to deaf-mutes, with such adaptations as were necessary to the case of imbecile children. The school established by him is still carried on at Berlin, though with the disadvantage of being organized as a department of a lunatic asylum. It was a curious coincidence that almost simultaneously in France, Switzerland, and Germany, independent efforts were inaugurated for the benefit of the mentally defective class; and the year 1842 must be looked upon as an epoch memorable in this matter. Although Seguin is entitled to the credit of priority, he himself modestly avers that "at certain times and eras, the whole race of man as regards the discovery of truth, seems to arrive at once at a certain point, so that it is hard to say who is the

discoverer." In 1843, however, the merits of Seguin were publicly recognised by the illustrious Voisin, in a paper read by him before the French Royal Academy of Medicine. "Already in 1838," says he, "Seguin had published the result of his efforts on behalf of a certain number of pupils, whose condition he has favourably modified. His studies during a later period are entirely unique; and I do not doubt that the time is not far distant when he will be entitled by his psychological contributions to take a distinguished place amongst his contemporaries." Voisin's prognostications were fully justified by the publication, in 1846, of Seguin's *magnum opus* entitled "Traitement moral, Hygiène et Éducation des Idiots et des autres Enfants Arriérés." This book may indeed be regarded as the *magna charta* of the mental emancipation of the imbecile class.

Defining idiocy as "an infirmity of the nervous system, which has for its effect the abstraction of the whole or part of the organs and the faculties of the child from the normal action of the will," he proceeds to divide all cases into two principal classes, those of profound, and those of superficial idiocy. The basis of the treatment which he proposes is in the main identical with that which in later works he described under the designation of **physiological education.** Starting with the axiom that "The education of the senses must precede the education of the mind," he argues that the true physiological method of tuition for persons

whose nervous system is imperfectly developed is (1) "to exercise the imperfect organs so as to develope their functions," and (2) "to train the functions so as to develope the imperfect organs." Ingenious devices are described whereby the organs of the senses may be methodically exercised, and cases are given in minute detail in which such exercises have been adapted to special incapacities. Seguin himself defines his system as an "adaptation of the principles of physiology through physiological means and instruments, to the development of the dynamic, perceptive, reflective, and spontaneous functions of youth."

In Great Britain some interest had been aroused by the publication, in 1843, of an account by Dr. William Twining of what he had witnessed at Guggenbühl's institution on the Abendberg. This, indeed, seems to have led to the establishment, in 1846, of a small school for imbeciles at Bath, under the management of the Misses White. Articles by Mr. Gaskell (afterwards a Lunacy Commissioner) and Dr. Conolly (the enlightened Superintendent of Hanwell Asylum) upon the work of Seguin at the Bicêtre, which appeared in 1847, lead to a further practical development in England, and in 1848 Park House, Highgate, the mother institution of Earlswood and of the Eastern Counties Asylum at Colchester, opened its doors for the treatment and training of the imbecile, Dr. Conolly and Dr. Reed acting as its gratuitous secretaries.

Meanwhile the New World was closely treading upon the heels of the Old in the onward march of progress in the education of imbeciles. Early efforts had indeed been made in the most progressive of the United States to benefit idiots by training them in connection with special schools for the deaf, and for the blind; but Massachusetts was the first to move in specific provision for this class by appointing "Commissioners to inquire into the condition of idiots in the Commonwealth, to ascertain their number, and whether anything can be done for their relief." Dr. S. G. Howe, well known as the successful instructor of the blind deaf-mute, Laura Bridgman, was the Chairman of this Commission. Their report, issued in 1848, with elaborate statistical tables, led to a grant by the Legislature of 2500 dollars for the establishment of an "experimental school for feeble-minded children;" and about the same time a private school was opened at Barre, Mass., by Dr. H. B. Wilbur, being "designed for the education and management of all children who by reason of mental infirmity are not fit subjects for ordinary school instruction."

In 1857 an "experimental school" was started by the State of New York; and this subsequently developed into the State Asylum at Syracuse, over which Dr. H. B. Wilbur long and ably presided. The first report of the Trustees so well sets forth the aims and limitations of training that we are tempted to quote a few lines as follows:—

"We do not propose to create or supply faculties absolutely wanting; nor to bring all grades of idiocy to the same standard of development and discipline; nor to make them all capable of sustaining creditably all the relations of a social and moral life; but rather to give to dormant faculties the greatest possible development, and to apply these awakened faculties to a useful purpose under the control of an aroused and disciplined will. At the base of all our efforts lies the principle that, as a rule, none of the faculties are absolutely wanting, but dormant, undeveloped, and imperfect."

Pennsylvania was next in order in establishing a "Training School for Feeble-minded Children." Taking up the private enterprise of Mr. J. B. Richards, a state-aided charity was formed, which under the fostering care of its late Superintendent, Dr. Isaac Kerlin, has become, at Elwyn, a model village for the feeble-minded.

The State of Ohio provided for her feeble-minded children in 1857, and the Institution at Columbus, with its splendid stock-farm, is appointed on the most liberal scale, and contains over 800 inmates under the care of Dr. Doren.

Connecticut, Kentucky, and Illinois, were also early in the field, having established State Institutions for the feeble-minded between 1855 and 1865. It is noteworthy that all the early American schools were organised on strictly educational lines, the imbecile institution being regarded (in

the words of Dr. Howe) "as a link in the chain of common schools—the last indeed, but still a necessary link to embrace all the children in the State."

Several additional State Institutions have been founded during more recent years, the most considerable being that in the far west for the State of California. No less than 1670 acres of fertile land have been appropriated to this institution, an estate naively described as having "everything on it that the Garden of Eden had, except perhaps the forbidden fruit!" At the close of 1892 there were in the United States no less than 19 public institutions for the feeble-minded, besides private schools, with a total of 6009 inmates under care and training. For these the capital outlay amounted in the aggregate to four million dollars, while the annual expenditure was not less than one million.

The present may be a convenient place for comparing the public provision for the education of mentally defective children in the United Kingdom with that in the United States. The first steps in this direction have been already indicated, and it is only now necessary to state that in England there is to-day only one rate-supported institution — the Metropolitan District Schools for Imbeciles at Darenth, Kent—besides five charitable foundations, (also receiving payment cases), the most considerable being Earlswood and the Royal Albert Asylum at Lancaster,

each accommodating some 600 patients. The aggregate provision by the charitable institutions is for about 1600 cases; while the schools at Darenth accommodate 1000. There is also in connexion with the County Lunatic Asylum at Northampton, a separate block for 50 imbecile children; and similar arrangements are contemplated in connexion with the Middlesex, Essex, and Hants County Asylums. Thus the total provision for England and Wales is for 2700 cases at most, whilst in the United States the provision, according to the most recent information, is 6315! It is stated that the United States Census of 1890, showed a total of 95,571 "idiotic and feeble-minded persons"; in the 1881 Census for England and Wales, the householder's schedules returned a total of 32,717 "idiots and imbeciles." Unfortunately our own census of 1891 did not furnish any information on the subject, the Commissioners having concluded, from the experience of 1881, that the returns as to idiocy and imbecility were so defective as not to be worth collecting. They calculated in fact that the returns as to persons under 20 years of age ought to be doubled, and on this basis the aggregate number at all ages would amount to 41,940. Special care was exercised in the United States enumeration of "feeble-minded" for the Census, but Dr. Fernald* estimates some deficiency, and suggests that "taking the country as a whole there are

* "History of Treatment of Feeble-minded." Boston, 1893, p. 20.

two feeble-minded persons to every 1000 persons," and that six per cent. are cared for in special institutions. If we allow for an increase in the number of idiots and imbeciles in proportion to the increase of population of England and Wales, we shall have in round numbers 46,000 idiots and imbeciles, and we have seen that the institution provision is for 2700, that is for about 5·8 per cent. But we must remember that whereas in America the majority of the institutions have been built and maintained by State funds, in England the provision is to the extent of almost two-thirds voluntary. There is moreover reason to believe that the deficiencies as regards the enumeration of idiots and imbeciles is less considerable in the United States' than in the English census, so that much remains to be done, especially by the Poor Law authorities, to bring our own country up to the American standard in the public provision for imbecile children. We reserve for a subsequent chapter the consideration of the special instruction for deficient children recently instituted by the School Boards of London and Leicester. In Scotland accommodation is provided in special institutions for about 300 children, whilst in Ireland there is specific provision only for 60!

From a recent report by Dr. Bourneville it would appear that in France special provision is made for nearly 1000 "idiot, imbecile, backward, and epileptic children" in the Department of the

Seine, the establishment at the Bicêtre being the most notable. At a few of the provincial asylums isolated arrangements are made for idiot children; but there seems to be no separate educational institution. In the German Empire there are no less than 29 public institutions for mentally-defective children, besides 15 in private hands. In Switzerland there are 14, public and private; in Denmark 3, and the same number in Norway, containing an aggregate of 450 children. That comparatively poor countries like the latter should do so much for their defective children—and in Norway and Denmark there are in addition special "auxiliary" classes for abnormal pupils in connexion with the public elementary schools—is somewhat of a reproach to ourselves. At any rate the example they set us should be an incitement to further efforts to help those who, without kindly aid, cannot possibly help themselves.

CHAPTER II.

THE "FEEBLE-MINDED" OR MENTALLY-FEEBLE CHILD.

HAVING traced the progress of educational efforts on behalf of children with mental defect so obvious as to mark them as idiots or imbeciles, we must now refer to those less definite cases of mental infirmity which, in later years, have been described under the specific designation of "Feeble-minded." It may be well to explain that according to American usage, this term has long been employed* "to include all degrees and types of congenital defect, from that of the simply backward boy or girl, but little below the normal standard of intelligence, to the profound idiot, a helpless, speechless, disgusting burden; with every degree of deficiency between these extremes." Consideration for the feelings of relatives has doubtless been the motive for this euphemism, which, however, has not obtained in our own country, where "idiocy" has been used officially to cover the lower grades, and "imbecility" the higher grades of certifiable mental defect. Of late years, however, public attention has been drawn to a class

* Fernald, *op. cit.*, p. 13.

of children who, while not imbecile, present a certain amount of mental deficiency disqualifying them from profiting by the ordinary educational curriculum, and consequently requiring special modes of instruction. Such children were referred to in the report (in 1889) of the "Royal Commission on the blind, deaf, and other classes requiring exceptional modes of education," under the designation of "feeble-minded," and this term has thus acquired in this country a special significance. Under the auspices of the British Medical Association, the Charity Organisation Society, the British Association for the Advancement of Science, the International Congress of Hygiene and Demography, and other public bodies, laborious investigations have been undertaken by several committees more or less connected (Dr. Francis Warner being the active conductor of the enquiry), and in 1892 a report on 50,000 children seen in 106 schools was presented to the Local Government Board, the summary having also been laid before the International Congress on Hygiene, held in London in 1891. The investigation of additional 50,000 school children has been carried on since that date, and a provisional report was presented in September, 1894, to the meeting of the Congress at Budapest. A comprehensive report embracing the statistics of the whole 100,000 children is about to be issued, and will doubtless contain much that is of interest to the physiologist, psychologist, and educator.

From an interim report, prepared in July, 1893, we extract a few particulars which will give an idea of the nature of the enquiry.

The basis of Dr. Warner's method is the principle that "all expression of nerve states and of mental action, is by movements and results of movement,"* and consequently abnormal movements, and even attitudes, may be taken to denote abnormal nerve states or mental action. Correlated with these are frequently found defects in development and in nutrition; combinations of the three factors, defects in development, nerve signs, and low nutrition, being constantly met with. Mental dulness is found associated in greater or less degree with these physical abnormalities, which may consequently be regarded as, at any rate, warning notes of intellectual defect.

"It appears that about seven per cent. (of children seen in schools) are mentally dull, and sixteen per 1000 require special care and training."†

Dr. Warner's method of inspecting a school is as follows:—"The pupils are observed as they stand in rank, usually a standard, or a smaller section at a time. The inspector, standing in front of each child, in turn holds a shilling for him to look at, so as to fix his eyes and thus obtain a full face, as well as a profile, view of each

* Milroy "Lectures," 1892.

† Sir Douglas Galton, "Times," March 19, 1894.

side, noting the features separately, the cranium, the expression and muscular action of the parts of the face, the eye movements and other points. The trained observer can read off the points in the physiognomy of the individual features and their parts, noting the proportion and form of each.

"Having inspected each child in the line, as described, the children are asked to hold out their hands in front of them, and for a moment the action is done before them. The balance of the hand, spine, shoulders, as well as the arms, hands and fingers, are noted in each case; finally the observer places his hand on the head, noting the size, form, bosses, &c., and the palate is inspected in each case.

"At each of these stages in the enquiry, children presenting deviations from the normal, in any particular, are asked to stand aside. The teachers are then asked to present any exceptional or dull children not picked out by the observer.

"Each selected child is examined individually, and noted on a schedule form in which the defect or abnormal size is verbally described, and the teacher's report of the child's mental status is added. The name, age, and standard, of each child is entered, and the number of children seen in each standard is recorded."

It would be foreign to our purpose to pursue the details of this subject, for which the reader is referred to the full "Report of the Committee on

the Mental and Physical Condition of Children," to be shortly issued. Whatever may be the criticism of the methods employed, it cannot be questioned that much conscientious labour has been expended on the enquiry by Dr. Warner and his colleagues, and that a flood of light has been shed upon educational problems from the physiological standpoint.

Whilst giving prominence to this enquiry, as perhaps the first comprehensive scientific investigation of abnormalities in school children, it is not intended to claim priority for England in the practical provision for the "mentally-feeble," a term which we regret has not been adopted to connote this special class of exceptional children, so as to avoid the ambiguity of the American term "feeble-minded." So far back as 1881 we find an "auxiliary class" (Hülfs-Klasse), established in connection with the municipal schools of Brunswick for the benefit of children, who though not idiots or imbeciles, were so far mentally inferior to their schoolfellows as to render their instruction in the ordinary classes nugatory. By dint of individual attention, rendered possible by an increased ratio of teachers to taught, and of an adaptation of the system of sensorial and manual training found so serviceable in institutions for imbeciles, Herr Kielhorn, the director of these classes, has obtained the most satisfactory results. Similar classes, or special schools, have also been established at Cologne, Dusseldorf, Crefeld, Gera,

Dresden, Leipsic, &c. In the Brunswick classes there are now about 110 pupils; at Cologne there exist two special schools, with an aggregate of nearly 300 children. As a rule not more than twenty pupils are allotted to one teacher; and comparatively slow progress (one year's ordinary school work being got through in four), is all that is expected by the school authorities. Some children remain in these classes till eighteen years of age; and, if necessary, on leaving there is charitable aid in finding them suitable employment. In the Scandinavian countries, also, in addition to boarding establishments for imbeciles, classes for the special instruction of abnormal children have long been established. In Christiania and in Bergen, such classes are carried on in connexion with the public elementary schools, under the direction respectively of Herr Lippestad and Herr Sœthre, the superintendents of neighbouring imbecile institutions. In Copenhagen this work forms part of the elaborate organisation of Dr. Keller for the care and training of the abnormal classes. The fact that he has a staff of twenty-five teachers for 200 children, shows that instruction is as far as possible individualised, and from personal inspection we can vouch for its admirably practical character. Much industrial training is given, and employment on a farm, also in brush and broom making, is provided for boys who have passed through the school course, while situations in domestic and dairy service are found

for the girls, whose careers are carefully watched, with the result that "very few turn out badly."

On March 5th, 1891, the School Board for London instructed a committee to consider the advisability of carrying out the recommendation of the Royal Commission previously alluded to, which ran as follows:—"That with regard to feeble-minded children, they should be separated from ordinary scholars in public elementary schools, in order that they may receive special instruction." The result was the establishment, in the following year, of "Schools for Special Instruction" of children who, by reason of physical or mental defects, could not be properly taught in the ordinary standards or by ordinary methods; and Mrs. Burgwin was appointed organising Superintendent. Under her able direction no less than 17 centres of special instruction have up to the present time been established, chiefly in the poorer districts of the metropolis, and there are now nearly 600 children on the roll—a number constantly increasing. The Board have wisely ordained that no more than 30 children be assigned to each teacher; and in practice the classes are even smaller than this. The ratio of pupils is, indeed, much larger than that which obtains in the Scandinavian schools, where one teacher is provided for every ten pupils; but the superintendent utilises to the utmost the teaching force at her command by a well-devised time table. It may be remarked

with regard to this that though the ordinary school nomenclature of studies is retained (as in the case of the so-called "3 R's") much more than the ordinary instruction is included, sensorial and manual training, and objective methods of demonstration being much resorted to. The "occupations," which form an important part of each day's work, are especially adapted to the varying capacities or incapacities of individual pupils; and the results as evidenced at a recent exhibition of the products of manual training in the London Board Schools generally, are most encouraging, and in some cases surprising. It may be stated, indeed, that at this exhibition the array of work by children in the special classes creditably held its own, side by side with that of the normal children. The selection of pupils for these classes is made by the superintendent of special instruction, upon the recommendation of the teacher observing the deficiency, and with the approval of the medical officer to the School Board. Expert discrimination of appropriate pupils is no doubt essential to the success of this praiseworthy work.

A few private educational homes, in which mentally-deficient children who cannot properly be designated idiots or imbeciles, are received for instruction on the same lines as those of the school board special classes, have of late years been instituted; and as, in many cases, bodily weakness is coincident with mental feebleness,

skilled medical supervision of such education is an advantage. It is obvious that a child whose mental deficiency or nervous peculiarity is but slight, will have a better chance of improvement when educated with those of similar mental calibre, than if subjected to hopeless competition with normal children at an ordinary school, or on the other hand, exposed to the depressing influences of an institution where idiots are received.

In addition to special arrangements organised by school boards, certain philanthropic agencies have of late years established small industrial homes in various parts of the country for the employment, under judicious supervision, of feeble-minded adolescents. In the case of girls, kindly oversight is of course especially called for, and the homes at present established are exclusively for them; but it is hoped that the needs in this direction of the "inferior" sex, if not so pressing, may not ultimately be lost sight of.

A few illustrative cases, giving an idea of the class of children to whom the designation of "feeble-minded" or "mentally feeble" may appropriately be applied, may help to elucidate the subject. Such children are also described as "backward," or of "retarded mental development"—terms corresponding to the "Enfants arriérés" of French writers, the "geistig-Zurückgebliebene" of the Germans, and the "Tardivi" of the Italians.

CASE I.—A child of highly intellectual parents is noted to be somewhat delicate in babyhood, but no suspicion of mental abnormality is entertained by his parents, until at two years of age it is found he uses only a few monosyllabic words, and does not try to construct sentences for himself, though he can perfectly well repeat what is said to him. He frequently, indeed, repeats questions put to him instead of replying to them, thus shewing that the defect is not of hearing, but of understanding. Much care and patience is exercised by an intelligent mother, with the result that at four he speaks fairly well, though with thick utterance. Home education is carried on till he is seven years of age, but a brother two years younger is almost two years in advance of him in elementary studies. He is then sent to a kindergarten for morning lessons; he takes interest in the songs and in simple musical drill, does paper-folding, stick-laying, mat-weaving, and bead-threading in series of number and colour. His interest, however, soon flags, and he is apt to repeat the same question again and again, as if not attending to the answer. In calculation he gradually makes progress, and by degrees masters the simple rules of arithmetic. By dint of individual instruction, he attains, by the time he is ten years of age, the power of reading, though in a monotonous style, easy stories in a primer, writes copies in texthand, and plays simple exercises on the piano. There is, however, still a

marked childishness of manner, a thick articulation and *staccato* utterance, and a tendency to repeat questions in a meaningless way. His bodily development has improved, and his only sensory defect is an error of refraction corrected by spectacles. Some twitching movement is noticeable in the muscles of the fingers, especially under excitement; but otherwise muscular control is fairly good. Under drill, regulated muscular exercise, manual training, and varied but brief school lessons, considerable improvement is proceeding.

CASE II.—A sturdy, well-grown boy of ten. Senses good, speech very deficient, consisting of only a few monosyllabic labial sounds. Very bright-looking and observant. Head normal in form and size. Palate somewhat high. History of carriage accident to mother about the sixth month of pregnancy. Has had all the infantile disorders; occasional "twitches," but never any fits. Has at intervals of two or three months febrile attacks, with pains in his head and injected eyeballs, and some stupor. Has been regularly taught at home, but made very slight progress, it having been found impossible to fix his attention for more than a minute or two at a time. Under regulated diet and exercise, musical drill with others in school, articulation exercises, and short attractive kindergarten lessons, he is making satisfactory progress.

CASE III.—A bright looking gentlemanly little

boy of nine; parents had financial anxieties which worried mother before his birth. As an infant showed weakness of back, and was long in learning to walk. Had whooping-cough when fourteen months old, and was worse after this, having occasional "falling attacks" (probably *petit mal*). Speech retarded, but now fairly good, and when not deterred by shyness, chatters volubly on a variety of subjects. The head circumference measured nineteen inches; the frontal region tapering to a median ridge, the left side of head smaller than the right. The occipital region fairly well developed. There seems to be some slight want of power on right side of body, as compared with left, and he cannot hop on right leg. Hands when held out droop, and there are some twitching movements of fingers. He is thin, though his appetite is good and he is judiciously fed. Had attended a kindergarten class for two years, but had learned very little; could not count at all. For two years subsequently he was in an institution for imbeciles, where he made but little progress, and seemed very nervous when with children worse than himself. During the last year has had special instruction with a few other mentally-feeble children, under medical supervision, and is now beginning to read, write, count, model in clay, and work usefully in the garden. His cranial circumference has increased 1½ inches during the last four years, and the forehead has developed notably.

CHAPTER III.

Pathological Classification of Forms of Mental Deficiency.

As has been stated in the preface, it is not intended in the present work to do more than glance at the pathological aspects of the subject. Those interested in these aspects will find in the well known textbook by Ireland,* in the various volumes of "Recherches" by Bourneville,† and in an article by Fletcher Beach, in Hack Tuke's "Dictionary of Psychological Medicine," much that is valuable. We must content ourselves by stating facts in pathology which will be serviceable in classifying cases. And first we remark, that in connection with mental deficiency we find two main divisions of cerebral abnormality, (*a*) that arising from formative or developmental defect, and (*b*) that resulting from inflammatory or degenerative processes. Each class of abnormality corresponds of course to the broad primary classification of cases of mental deficiency into (*a*) Congenital, and (*b*) Non-congenital. There is, how-

* "Idiocy and Imbecility," W. W. Ireland, 1877.

† "Recherches sur l'Epilepsie, l'Hystérie, et l'Idiotie," Paris, 1890, *et seq.*

ever, a mixed class of cases, in which the actual lesion supervenes upon a brain originally imperfect in development, and to such cases, occurring at a crisis of early life, has been given the name of DEVELOPMENTAL. The extent of the cerebral abnormality, whether original or acquired, may *a priori* be expected to bear some proportion to the degree of mental defect, and this is usually the case, though it is necessary to bear in mind that microscopical, as well as macroscopical, constitution of brain tissue, must be taken into account, and that certain portions of the brain are of more importance (*quâ* intelligence) than others.

Of congenital abnormalities the most striking is **microcephalus.** In its extreme form it is characteristic of a low form of idiocy, in which have been traced simian and even theroid resemblances. There are a series of gradations rising through idiocy and imbecility to simple "feeble-mindedness," which is not unfrequently associated with small-headedness. Microcephalus, however, does not depend solely upon diminutive size of head, as ascertained by measurement; and in our opinion* the limitation of the term proposed by some to cases in which the cranial circumference does not exceed seventeen inches, is scarcely scientific. There is a characteristic form†, as well as size, of microcephalic heads; such, for example, as a narrow, rapidly receding forehead, a some-

* Ireland, *op. cit.*, p. 79.

† See Plate I., fig. 1.

PLATE I.

COMPARATIVE CRANIAL CONTOURS.

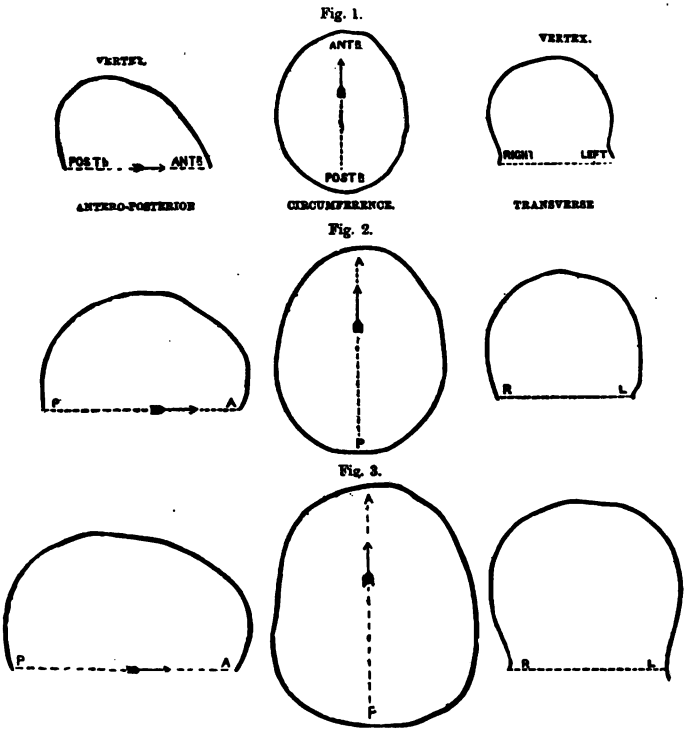

Fig. 1. Microcephalic Contours. Fig. 2. "Mongol" Type Contours.
Fig. 3. Hydrocephalic Contours.

what pointed vertex, and a flat occiput. Though of course the frontal and parietal lobes are on a small scale, it is in the occipital and temporo-sphenoidal that we usually find the most striking evidence of arrest in development. This is well shown in the case of a microcephalic girl of fifteen, formerly under the care of the author at the Royal Albert Asylum, whose brain was fully described by him in the "Journal of Mental Science," for October, 1878. A view of the convexity of the brain, and a diagrammatic sketch of the convolutions, is appended (Plate II. figs. 1 and 2).* A still more remarkable case ("Freddy"), for twenty years under the author's observation at Lancaster, has recently been anatomically reviewed by Dr. Telford Smith and Professor Cunningham, of Dublin. His brain, when recent, weighed only 12½ ounces; the convolutions were simple, though fairly distinguishable in the anterior lobes, but became rudimentary posteriorly, the occipital and temporo-sphenoidal lobes being indeed very imperfectly developed. This "Aztec"-like youth,† who had large bright eyes, an aquiline nose, and some-

* Description of Plate II.—Fig. 1.—General view of Microcephalic Brain seen from above. A. Parieto-occipital fissure. B. Horizontal fissure. C. Ascending limb of Sylvian fissure. D. Fissure of Rolando.

Fig. 2.—Semi-diagrammatic view of Microcephalic Brain, showing general arrangement of convolutions (right side). F.R. Fissure of Rolando. P.O. Parieto-occipital fissure. F.S. Fissure of Sylvius: 1. Horizontal limb; 2. Ascending limb. I.R. Island of Reil.

† See Plate IV., fig. 1.

what receding chin, manifested good powers of observation, but was only able to express himself in a few monosyllabic words. He had considerable will power, and though it was found impossible to train him to much that was useful, he was in no sense a low-grade idiot. We have repeatedly seen boys and girls with heads measuring only nineteen inches, taught to read and write, and to do industrial work. Quality of brain is an important factor, as well as quantity, and in cases of microcephalus what little there is is usually fairly active.

Defects of the corpus callosum and partial atrophies affecting only portions of the brain, are occasionally met with. Thus in the autopsy of a hemiplegic imbecile, who died at 21 years of age, a gap four inches in length was found extending from the anterior part of the right frontal lobe nearly to the occipital, leaving the orbital plate uncovered, and disclosing part of the cavity of the lateral sinus (see Plate III., fig. 2). Internally, a narrow ridge, marked by convolutions, separated this gap from the longitudinal sinus; and between it and the temporo-sphenoidal lobe was seen standing out, quite uncovered by convolutions, part of the caudal nucleus. The brain weighed 32½ ounces. This defect was probably in the nature of an arrest of development, as there was no cicatricial tissue to be made out, and no descending sclerosis of the spinal cord. The mother gave

PLATE II.

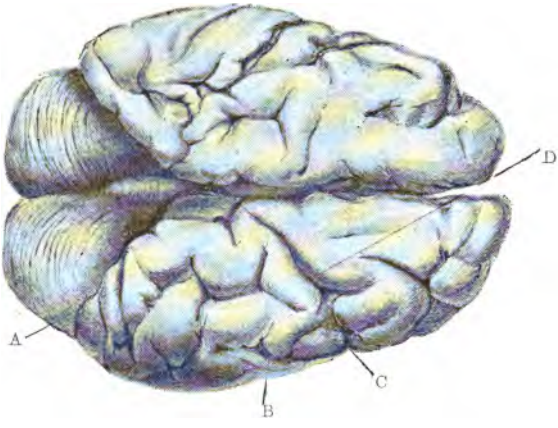

Fig. 1. Microcephalic Brain (Convexity).

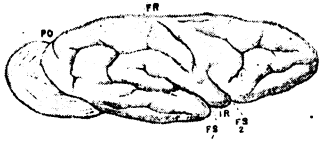

Fig. 2 Microcephalic Brain (Profile)

Fig. 3.

Fig. 4.

Defect of Cerebellum.

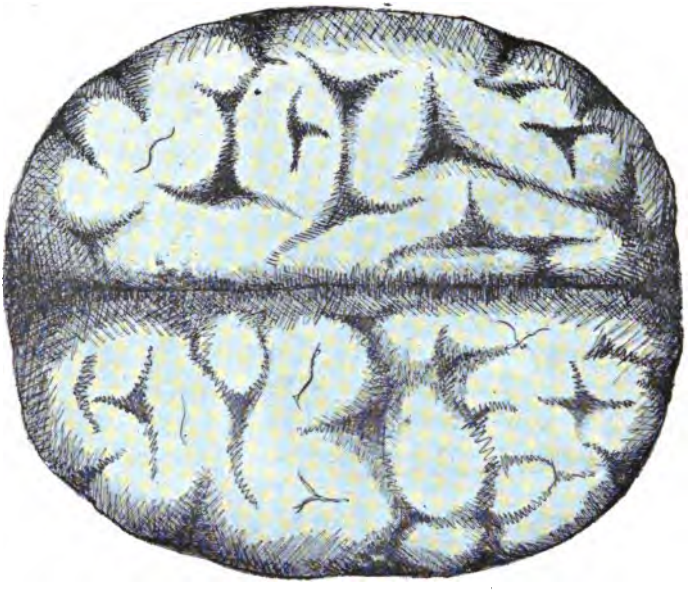

Fig. 1. Mongol Brain. (From pen and ink sketch).

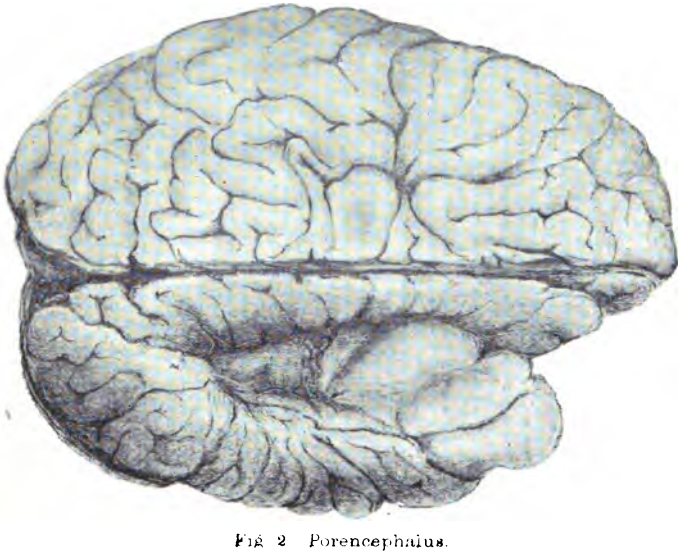

Fig. 2. Porencephalus.

an account of fright and injury in consequence of being knocked down by a cow about the sixth month of pregnancy. The patient had his left arm and hand smaller than the right; his senses were normal, his speech indistinct, but he was able to use ordinary sentences. He made himself very useful, and could clean shoes well.

A rare case of atrophy of the cerebellum was discovered at the autopsy of an imbecile girl of 15, who died at the Royal Albert Asylum of phthisis. As no marked ataxia or inco-ordination had been noticed during life, it was with some surprise that a merely rudimentary condition of the left lobe of the cerebellum was observed (see Plate II., figs. 3 and 4). This was represented by a papilla no larger than the nail of one's little finger, and the vermiform process was a minute nodule obscurely marked with laminæ; whilst the right lobe, which constituted the main portion of the cerebellum was only half a square inch in superficial area, and only a quarter of an inch in thickness at its base. This lilliputian lobule had, however, the normal laminated appearance and structure. The pons was indicated by only a few transverse fibres. With the exception of the cerebellum and its peduncles, the rest of the encephalon (which weighed 42 ounces) and the cranial nerves appeared to be normal. In this case there was considerable feebleness of body as well as of mind, as the girl suffered from a protracted illness (phthisis), but the gait was

by no means characteristic of cerebellar abnormality.

Congenital cases of **hydrocephalus** are not infrequently met with; though of course the condition is also non-congenital. Very different degrees of mental enfeeblement are met with in this type, and it is remarkable that a considerable amount of intelligence may subsist with a very watery brain, as in the case of a girl of eleven, peculiar but only slightly imbecile, who continued to converse rationally till within an hour of her death, when it was found that her large globular skull* contained twenty ounces of fluid to thirty-six of cerebral matter! In other cases optic neuritis and signs of pressure occur, and convulsions usher in a fatal termination. As a rule, indeed, it is only in cases where active symptoms have subsided that educational methods are admissible, and Plate IV., fig. 2, is that of a hydrocephalic youth, with head circumference of twenty-three inches, in whose case the chief residual indication of defect was in the direction of moral imbecility.

Another frequent congenital type, obtaining perhaps in nearly five per cent. of mentally-defective children in greater or less degree, is that which has been designated "**mongol**" or "**kalmuc,**" owing to physiognomical resemblances to those races. In these cases the skull is a short oval,† the transverse and longitudinal diameters approximating, and there being a tendency to parallelism

* See Plate I., fig. 3. † See Plate I., fig. 2.

PLATE IV.

Fig. 1. Microcephalus.

Fig. 2. Hydrocephalus.

Fig. 3. Double Athetosis.

Fig. 4. Sporadic Cretinism. Girl, age 20.

PLATE V.

Fig. 1. "Mongol" Type.

Fig 2. Inherited Syphilis.

of the frontal and occipital planes. Children of this type have a skin coarse in epidermis, if not furfuraceous; many have sore eyelids; some fissured lips; but one of the most striking peculiarities is the state of the tongue, which is transversely fissured, and has hypertrophied papillæ.* Many of them have almond-shaped eyes, obliquely set; and this feature, with the squat nose and wiry hair, gives the Mongol aspect from which they derive their name. There is reason to believe that they are essentially *unfinished* children, and that their peculiar appearance is really that of a phase of fœtal life. Some defect of formative force may usually be traced in connection with the intra-uterine life of these cases, not uncommonly ill-health or mental depression of the mother; and it is remarkable that nearly half these children are the last born of a long family, when the procreative powers are at a low ebb. In many there is a family history of phthisis; and the majority die, before reaching adult life, of tubercular disease. In children of this type the brain is not necessarily small, but it is characterised by great simplicity of development, and by paucity of multipolar cells. The convolutions are large and coarse, and there are no secondary convolutions.†

"Perhaps two-thirds, or even more, of all idiots are of the scrofulous constitution," says Dr. Ireland; and consequently we are not sur-

* See Plate V., fig. 1. † See Plate III., fig. 1.

prised to find various **scrofulous** lesions in the majority. In some, indeed, the history, personal and hereditary, of scrofula points to the constitutional taint as the main cause of the mental condition. Strumous glands and ulcers; tubercular affections of joints and serous membranes are of course frequent accompaniments of this variety.

Amongst other pathological conditions sometimes met with, dating from birth, are those resulting from meningeal hæmorrhage occurring from undue pressure during parturition. In these cases atrophic changes take place in the Rolandic area, and as a consequence ensue spastic contractions of the limbs, with inco-ordination and athetoid movements. The intellectual deficiences of children suffering from "**birth-palsies**" are more apparent than real, the intelligence which they possess being masked by their physical infirmities.

Cretinism may here be alluded to as a congenital taint, though its full development in many cases takes place after birth, producing mental deficiency. Intra-uterine cretinism fully developed results usually in the death of the fœtus, which displays a curious stunted conformation of body, with redundant skin, thickened cranial bones, and imperfectly formed face. The essential lesion is absence or atrophy of the thyroid gland, and there are often found fatty tumours in the supra-clavicular regions. Cases of sporadic cretinism

usually met with in this country differ from the above in the fact that the child appears normal at birth, but the characteristic conformation and mental hebetude are gradually developed. Progressive atrophy of the thyroid brings about a dwarfing of the physical growth and of the mental powers, and if the patient arrives at adult life he still retains the bodily and mental stature of the child (see Plate IV., fig. 4). The satisfactory results of thyroid treatment in these cases will be hereafter set forth.

In addition there remain a group of cases in which mental deficiency dating from birth may be said to depend upon a highly **neurotic** heredity. It is probable that in such cases there is a tendency to minute discharging lesions, and an imperfection of those inhibitory arrangements which in the normal child are gradually evolved. This, however, is perhaps a matter of psychological rather than of pathological interest.

We have now traced the prominent pathological conditions of the several typical varieties of CONGENITAL MENTAL DEFICIENCY, viz.:—

1. **Microcephalus,** and other formative cerebral defects.
2. **Hydrocephalus** (congenital).
3. **"Mongol"** or **"Kalmuc"** type.
4. **Scrofulous** cases.
5. **Birth-palsies** with athetosis.
6. **Cretinism** (congenital).
7. **Primarily neurotic.**

In the intermediate group of cases, which we have referred to as DEVELOPMENTAL, we include those forms of mental weakness which evidence themselves at some crisis of development, such as the first or second dentition, or the epoch of puberty, though traceable to an original defect of nervous constitution. Eclampsic, epileptic, syphilitic, and some post-febrile cases, may be thus classified.

A large number of cases of mental deficiency are attributed by parents to **convulsions during dentition.** Thickened cerebral membranes, sometimes thickened skulls, are seen in many of these cases, with consequent atrophic changes in the brain substance. In cases of persistent **epilepsy,** with mental weakness, the same class of lesions is sometimes met with, though of course the *fons et origo mali* is to be looked for in the minute structure of the nervous tissue.

Syphilitic cases are comparatively rare, and mental deterioration does not usually show itself until the period of second dentition. The stigmata of inherited syphilitic lues may, however, generally be detected; such as specific skin affections in infancy, radiating scars around the mouth, and in a certain number of cases, Hutchinsonian teeth, or at any rate, teeth of the "corkscrew" type. Death usually occurs in a few years after the onset of the symptoms, which progress much in the manner of general paralysis of the insane, and at the autopsy we find thickening of the cerebral arteries (from endoarteritis), and of

the meninges, with marked atrophy of the convolutions. (Plate V., Fig. 2, represents this type).

Of clearly NON-CONGENITAL cases the main divisions are **traumatic** and **post-febrile,** and in each the characteristic lesions are the products of inflammatory processes. Dr. Wilmarth,* formerly the pathologist of the large Pennsylvania Institution for Feeble-minded Children, states that in 100 consecutive autopsies made by him, he found in 54 conditions "constituting the residual effects of former disease or traumatism." In a large number of cases sclerosis with atrophy was observed; in a few the *sclérose tubereuse* of French writers. Thickened and adherent membranes, following meningeal inflammations and interfering with the due supply of blood to the cerebral cortex were noticed in a considerable number of cases; whilst porencephalus, which may be considered in some instances to be the terminal condition of acute inflammatory lesion, existed not unfrequently.

Emotional shock, such as fright to a young child confined in a dark cellar, or from the bite of a dog, is sometimes assigned as a cause of mental defect. How the nervous tissue is affected by shock is not easy to explain, but trophic changes, brought about by the sympathetic system, are probably important factors. At any rate cerebral atrophy, as if from arrested development, is found

* "Causation and early Treatment of Mental Disease in Children." *Journal American Medical Association*, August, 1894.

in some of these cases. **Toxic** cases, such as those of infants drenched with alcohol or narcotics, are also produced by an interference with a due nutrition of the nerve-elements.

In conclusion, we may briefly sum up the various non-congenital types of mental weakness, the pathological circumstances of which we have referred to, as follows:—

A. DEVELOPMENTAL CASES:

1. **Eclampsic.**
2. **Epileptic.**
3. **Syphilitic** (inherited).

B. ACCIDENTAL OR ACQUIRED:

1. **Traumatic** } **inflammatory lesions.**
2. **Post-febrile** }
3. **Emotional.**
4. **Toxic.**

We shall find that these divisions, together with those of the congenital types previously given (p. 31) will be serviceable in considering points in the etiology, diagnosis and prognosis of mental deficiency, which we shall proceed to discuss in the next chapter.

CHAPTER IV.

Etiology, Diagnosis and Prognosis.

In treating the subject of the etiology of cases of mental deficiency, we must consider the various factors of causation in the light of clinical experience. The present writer has already recorded his statistics (in conjunction with those of Dr. Fletcher Beach) in an article in Hack Tuke's "Dictionary of Psychological Medicine," in which 1200 cases observed at the Royal Albert Asylum, and 1180 cases at Darenth Asylum, are collated. It is not logical to attribute to a single specific cause the majority of cases met with, inasmuch as on investigation we shall discover several contributory factors. So strong indeed is the tendency of nature to revert to a healthy type that the solitary infraction of physiological law is not often visited by the penalty of mental abnormality; and if we only look back far enough we shall probably find that such a culmination is reached by the gradations of repeated transgressions. Not every drunken parent procreates an idiot; but when inherited nervous instability from this or other causes is intensified in the next generation by injudicious marriage, or by

unfavourable environment, instances of mental degeneracy are apt to occur. In our experience physical factors play an important rôle in the production of mental defects. A **phthisical family history** is, indeed, the predominant factor traceable in our cases, the percentage in which this was found being 28·31, against 21·38, in which **hereditary mental weakness** (insanity or imbecility) was recorded. It is true, however, that in addition, **epileptic** or **neurotic inheritance** showed a percentage of 20. **Parental intemperance** was noted in 16·38 per cent. of our cases, ranging from 13·25 at the Royal Albert Asylum, where the large majority of cases were above—some considerably above—the pauper class, to 19·57, at the pauper asylum at Darenth. Clear evidences of **inherited syphilis** were found in only 1·17 of our cases, though the taint was suspected in others. **Consanguinity** of parents or grand-parents appeared in less than five per cent. of the cases noted; and this factor would appear to be potent for harm in proportion to the risk entailed in intensifying "family weaknesses." Almost 30 per cent. were attributed to **maternal ill-health, accident,** or **shock** during gestation. These factors, sometimes occurring in combination, exhaust the principal CAUSES ACTING BEFORE BIRTH.

Among CAUSES ACTING AT BIRTH that to which undoubtedly most importance attaches is **prolonged parturition.** It has been alleged by Drs. Winkler, Bolaan, and others, that the use of

forceps is accountable for a considerable amount of cerebral injury and consequent mental impairment. So far from this being the case, it would appear from our statistics that **protracted pressure** without instrumental interference is a much more potent cause both of mental and nervous defect, the latter factor figuring more than four times as often as the former (*i.e.*, 14·24 per cent. as compared with 3·31) in our combined etiological table, whilst, in addition, the occurrence of *asphyxia neonatorum* is noted in 12·96 per cent. of Dr. Beach's cases. Dr. Langdon-Down* has indeed estimated the frequency of this condition at 20 per cent. amongst imbecile children generally, and at 40 per cent. amongst those who were first-born. It is unquestionable that the *asphyxia neonatorum*, so often due to protracted unassisted labours, is in some cases followed by birth-palsies, and enfeeblement more or less severe of the intellectual powers. It is probably accountable for not a few of the milder types of mental feebleness. **Premature birth** was noticed as a factor in 3·52 per cent. of our cases.

CAUSES WHICH COME INTO PLAY AFTER BIRTH are commonly heard of, as parents readily put these forward rather than the prænatal cause of a congenital defect, which they are loth to recognise. Consequently such assigned causes as a fall, a fit, or a fright, must be received with caution, and it

* "The Obstetric Aspects of Idiocy." *Trans. Obstet. Society*, 1876.

must be borne in mind that such may be at most the exciting cause, sometimes merely the consequence or coincidence, of a nervous catastrophe to which the child is congenitally predisposed. In the last chapter we referred to the pathology of developmental cases, and under this head many of those produced by causes acting after birth would properly fall. This remark especially applies to the cause most commonly assigned of all others for mental deficiency in children, viz., **convulsions during teething** (eclampsia), which figured in the statistics of the Royal Albert Asylum to the extent of 32·58 per cent. (nearly one-third of the admissions). There is no doubt that infantile convulsions frequently occur without producing any subsequent mental impairment, and when it follows it is safe to assume, except when inflammatory lesions have been set up, that there has been some inherited brain abnormality. **Epilepsy,** which occurs probably in about 25 per cent. of all mentally-deficient children, is also a commonly assigned cause. There are no doubt cases in which a previously bright child, afflicted with epilepsy, falls into a state of mental hebetude; but in the majority of cases, both the epilepsy and the mental abnormality are common consequences of inherited nervous instability. A similar statement may be made with regard to the rôle of **infantile paralysis** as a factor of mental deficiency. Though slight injuries are often set forth as causes when quite inadequate, there is

no doubt that **traumatism** (chiefly in the form of injury to the head) is a bonâ fide cause in a large number of cases—*e.g.*, in 8·25 per cent. of the admissions to the Royal Albert Asylum. **Fright** or **shock** (mental) shows as a factor in about three per cent. of our cases; and in such instances as that of a child cruelly locked up in a dark cupboard for several hours, or scared and bitten by a fierce dog, these are likely to be efficient causes. **Severe febrile illnesses,** such as whooping cough, scarlatina, measles, and small pox, were assigned as causes in nearly 10 per cent. of the admissions to the Royal Albert Asylum, and where meningitis had supervened, probably with truth. It is remarkable that our statistics, both at Lancaster and Darenth, gathered at a time when the worst features of our elementary school system were in vogue, give but little prominence to "over-pressure" as a factor, being noted in only ·16 per cent. of our 2,380 cases!

While the above statistics have been gathered from cases of recognised idiots and imbeciles, there is no doubt that the same sort of causes, acting, however, with less force, are accountable for those milder cases of mental infirmity which we designate feeble-mindedness. Mentally-feeble children are often the offspring of highly neurotic parents, sometimes of highly cultured persons, exceptionally gifted in a particular direction. It would seem indeed in some cases that the parents have themselves expended so much of their ner-

vous energy that they have little left to transmit to their offspring; and familiar instances will occur to every one, of distinguished men and women afflicted with children whose mental endowments are below the average. Bearing in mind the aphorism that

"Great wits are sure to madness near allied,"

and that a neurotic temperament is sometimes associated with intellectual brilliancy, this need not surprise us, though parents naturally consider it as extraordinary. Mental feebleness is in some few cases merely a consequence of feeble health, and with improved physical conditions the mental impairment may gradually disappear.

DIAGNOSIS.—The practical question often arises, how shall we recognise mental abnormality in a young infant? And the further enquiry may follow, is the mental abnormality *congenital* or *acquired?* Mothers are proverbially blind to imperfections in their own offspring, and in many cases it falls to the medical attendant to point out the painful fact that the poor baby is not "all there." It behoves him, therefore, to be well up in the diagnostic marks of infantile feeble-mindedness. We may group these under four heads, viz.:—

1. **Cranial abnormalities.**
2. **Formative and developmental defects.**
3. **Abnormality of nervous action.**
4. **Defects in nutrition.**

1. **Cranial abnormalities.**—The most significant is of course **microcephalus.** As has been previously stated not only deficient size but also characteristic form of head is indicative of this abnormality (see p. 24, *ante*). Taking the average head circumference at nine months as 17·5 inches, and at twelve months as 19 inches, any notable deficiency in head measurement in a child otherwise of normal size, may be taken to betoken microcephalus. It has been alleged that in some cases there exist absence of soft fontanelles and other signs of premature synostosis, but this is the exception and not the rule in microcephalus, in which the small skull is simply the diminished envelope of the brain of which the normal development has been arrested probably about the fifth month of gestation. We must refer to our previous description of the characteristics of microcephalus (see p. 24); here we need only observe that there is commonly but little sensorial deficiency or muscular weakness, so that the power of grasping, sucking, &c., is not impaired. The palate will be found high and narrow; in form, like a V or a gothic arch; and such abnormality of palate may be taken as diagnostic of congenital defect.

Intra-uterine **hydrocephalus** will probably have given rise to a difficult labour, and the cranial abnormality in the child is not likely to escape notice. In some cases sensorial deficiencies, as of sight or hearing, are associated with this variety.

The so-called "**Mongol**" type leaves its impress not only on the physiognomy, but on the form of the head, as has been already described; and there can be no difficulty in recognising it even in very early life.

Marked asymmetry of skull is met with in hemiplegic cases; and other distortions sometimes occur especially after a difficult labour. Occasionally injuries from forceps leave a permanent mark; but in our experience these are not more common with defective than with normal children. Asymmetry must not be taken as of itself a sign of mental defect; indeed in adult life it is said to be a mark of culture! Prolonged (dolichocephalic) crania with a median longitudinal ridge, especially over the sagittal suture, are met with both in normal and abnormal children, and consequently the scaphocephalic form cannot be called diagnostic. But the persistence of medio-frontal suture, or the existence of a medio-frontal ridge towards which a narrow forehead tapers, may be accepted as signs of imperfect development of the frontal lobes.

2. **Formative and developmental defects.**—As signs of imperfection of physical development are often associated with mental defect, we should look for such abnormalities of formation as hare-lip, cleft, high and misshapen palates, deficient ear-lobes, sometimes adherent to face and unduly set back, supernumerary auricles represented by tags of projecting skin, epicanthic folds extending

across the caruncle, opacity of ocular media, coloboma iridis, nose unusually indented at bridge or depressed, hairy growths or moles on forehead or face, nævi, rough and scaly condition of skin, imperfection of nails, general blueness of face, lips, &c., from cardiac malformation, blueness and coldness of hands and feet. None of these stigmata of physical failure necessarily imply mental deficiency, but their occurrence will lead at any rate to suspicion on the subject.

3. **Abnormality of nervous action.**—Spontaneous muscular activity, though with movements minute in character (the "microkinesis" of Dr. F. Warner), incessant during waking hours, is the characteristic of healthy infant life. If these movements be absent or excessive, we may reasonably suspect something wrong with the nervous system, and predicate mental irregularities. In the former case we shall find a dull, vacant expression, sometimes associated with imperfect reflex so that even the function of sucking is not properly accomplished. In the latter, there is over-mobility, perhaps nystagmus, and twitching movements of the muscles of the face. A general tremor is also sometimes met with. As indications of mental deficiency we must of course be guided by the extent of the departure from the normal in one direction or the other. As the age of the child increases we must carefully watch the evolution of its senses, and mark deficiencies of touch, sight, hearing, &c. At a later stage, the

absence of attempts at speech, when the hearing is not affected, will of course be of much value as a diagnostic sign. So also will be lack of muscular co-ordination and consequent inability to walk, independent of paralytic affection.

4. **Defects in nutrition.** — The emaciated wizened features of the slum baby, so often seen in the children's wards of East-end hospitals, furnish an extreme example of these defects. This may to some extent arise from injudicious feeding, but there is undoubtedly a congenital state of malnutrition, evidenced for instance in cases of inherited syphilis. Persistent defects of nutrition, in spite of good feeding, are symptomatic of defect of original constitution and are not unfrequently associated with mental deficiency. This fact was remarked by Dr. Warner in his inspection of Poor Law Schools, where, notwithstanding good feeding, the tendency to low nutrition was in greater ratio than with ordinary school children.

To sum up, we shall find aid in diagnosing the CONGENITAL character of mental deficiency by noting abnormalities in the form and shape of head, and the condition of the cranial sutures; by looking for the physical stigmata, if not of degeneration, at any rate of arrested development; and by marking signs of abnormal nervous action and a constitutional tendency to imperfect nutrition. The occurrence of *asphyxia neonatorum*, the absence of a healthy cry, defect of reflex action and

of grasping power, imperfect reaction to light and to sound, absence or excess of spontaneous movement, and (as time goes on) inability to notice objects or to fix the attention, with tardiness of attempts at speech and at walking, are some of the symptoms marking the child as different from other children. NON-CONGENITAL cases are differentiated by the absence of such signs of original defect; by a history of normal condition in infancy until the occurrence of some serious accident, illness, or shock, which was followed by mental enfeeblement. Caution is needful in accepting the statements of parents on these matters, but it must be remembered that a certain number of cases, not obviously suffering from congenital defect, are born with brains so unstable as not to be able to withstand the stress of life, and these may break down at a crisis of child development, or after a comparatively slight injury, which would leave a normal child unharmed.

The DIAGNOSIS and PROGNOSIS of the various types of mental deficiency are so closely connected that it will be convenient to consider them in common. First we may remark with regard to the broad division into congenital and non-congenital cases, that the prognosis in the former is, as a rule—(contrary to the popular idea on the subject)—better than in the latter. The fact is that in the one there is simple defective development, and this under favourable circumstances may be

fostered and promoted; in the other there is actual lesion of brain tissue, more or less irremediable. Superficial appearances are in favour of non-congenital cases, for the others are handicapped by ill-formed and sometimes repulsive physical features; yet our experience is quite in accord with that of Dr. Langdon-Down,* who says that "the prognosis is, contrary to what is so often thought, inversely as the child is comely, fair to look upon and winsome." There are, however, a few cases of mild traumatism, and even of post-inflammatory lesion, in which a more cheerful view may be taken, especially in these days of brain surgery.

Passing now to some of the typical groups, let us first take the small heads, those with greater or less degree of **microcephalus.** The prognosis may be said to be (generally speaking) favourable or otherwise, in proportion to the size of the head. With heads under 18 inches in circumference, the manifestation of mental power is usually so small as to come under the category of idiocy; between 18 and 19 inches the cases may be designated as imbecile; and from 19 to 20 inches is not an uncommon measurement in cases of mere "feeble-mindedness." There is hope of improvement under training, especially for the higher grades of this type, and the writer has had under training for four years a mentally-feeble boy whose head circumference has in-

* "Obstet. Trans.," vol. xviii.

creased during that time from 19 to 20½ inches. As the sensorial and muscular powers are usually good in microcephalic cases, the better class of such patients may be taught useful industrial work, and we have known a girl with a head of 18 inches employed as an assistant dormitory maid, and a boy with a head of 19 inches helping intelligently in a bakehouse. The physical health of microcephals is usually not amiss, and under favourable circumstances they may live to adult, and even advanced, years. Some simple occupation, not requiring head work, is the goal for such, the mental being limited by the cranial capacity.

But as old Fuller quaintly puts it, though "heads are sometimes so little that there is no room for wit, they are sometimes so long that there is no wit for so much room." We have already remarked that *long* heads do not at all necessarily go with mental deficiency—sometimes the reverse; and if Fuller had written *large* heads instead of *long*, it would have been more in accord with our experience. We refer of course to the **hydrocephalic type,** the features of which have been already referred to.* Here we may add that some diagnostic care is necessary to distinguish this type from that of the **hypertrophic** heads occasionally met with. In hypertrophy the circumference is less than that in hydrocephalus, and the increase of size is most marked just above the

* See Plate IV., fig. 2.

superciliary ridges, not at the temples. The general form of the head is not so globular, but rather piled up towards the vertex. The disease is sometimes associated with rickets; there is often complaint of headache; sometimes encephalitis and acute mania. The prognosis of hypertrophy of brain is consequently unfavourable; whereas in hydrocephalus, after the acute symptoms have subsided, the prospects of improvement under judicious training are considerable.

With regard to the so-called **Mongol** type,* the physiognomy, the form of the head, the furrowed tongue with hypertrophied papillæ, the fissured lips and the harsh condition of skin and mucous membrane, are quite characteristic; and the mental condition is equally so. Their powers of mimicry are often extraordinary; their love of music great; their idea of time as well as tune remarkable; so that they are apt at drill and dancing. Varied gradations of this type are met with from the mentally-feeble child with but slight "Mongol" taint to the idiot whose obliquely-set almond-shaped eyes are very suggestive of the "heathen Chinee." So far as mental training is concerned, the results, especially amongst the higher grades are fairly satisfactory, and we know youths of the mildly Mongol type who, after appropriate education, pass muster with their brothers and sisters. Simple imitative arts, such as writing and drawing, are acquired without

* See Plate V., fig. 1.

much difficulty, but the coarsely-convoluted brain is unequal to higher intellectual operations, and calculation is a stumbling-block. Simple industrial occupation, such as that of the garden and farm, may be followed, but the clumsy ill-formed fingers militate against success in mechanical work requiring fine adjustment. From the physical side, however, the prognosis of such cases is not good. They are generally delicate and very susceptible to cold, being apt to suffer from chilblains. They are prone, moreover, to mucous catarrhs of the digestive and respiratory tracts, and the majority die from phthisis before arriving at maturity.

Of the cases in which the stigmata of **scrofula** are strongly marked, we may say that the prognosis varies with the intensity of the taint. Much depends upon favourable environment, and it is remarkable how such cases improve, both mentally and physically, when withdrawn from insanitary slums and placed under good hygienic conditions, especially when employed in out-door work in pure country air.

In cases of mental deficiency associated with **birth-palsy,*** the history of the case, the occurrence of convulsions during the first few days after birth, the liability to athetotic movement, distinguish this form from that associated with **infantile hemiplegia.** In the latter there is a history of convulsions later in infancy, with power suddenly lost on one side; and when the paralysis

* See Plate IV., fig. 3.

begins to improve, spastic contractures are left and there is the characteristic hemiplegic gait. In the first class of cases, those following birth-palsy, the mental deficiency is often more apparent than real, and the patients improve wonderfully under appropriate training. The athetotic movements disqualifying them from ordinary use of the hands, may be overcome by suitable finger exercises (such as will be hereafter described), and as considerable power of will exists, the patient will often be able to co-operate with the doctor in trying to combat his infirmities. We have repeatedly seen children of this type, at first unable to hold a pencil, develop into admirable draughtsmen; indeed the graphic faculty seems to be common with such cases. Intricate Macramé patterns have also been worked out by such, and delicate wood-carving done. Various grades of mental defect from simple feebleness to crass idiocy are associated with infantile hemiplegia, and the prognosis varies with the degree. Such cases have usually to be attacked from the physical side, muscular atrophies and contractions being subjected to electrical treatment and massage; and in the milder instances considerable improvement both physical and mental, may be anticipated.

The features of **sporadic cretinism** are so characteristic as when once seen to leave no doubt as to diagnosis.* Dwarfing, both of body and mind, with slow reaction and response, a loose baggy

* See Plate IV., fig. 4, and Plate VI., fig. 1.

skin, tumid belly, bowed legs, broad squat hands and feet, are some of the general characters. Then there is the square head, the broad flushed cheeks, the indented pug nose, the pouting lips, and the protruding tongue, which make up a physiognomy when once seen never forgotten. Investigation shows deficiency or absence of the thyroid gland, and in many cases supra-clavicular fatty tumours. The prognosis of such cases was, till within recent years, most unfavourable. Now, thanks to the experimental researches of Victor Horsley, Schiff, and others, their successful treatment by administration of the thyroid gland is an everyday occurrence. Physical and functional development proceed at a rapid rate, and the mental hebetude and slowness, characteristic of such cases, are transformed into a vivacity and activity strangely contrasting with the previous condition. It would seem, however, that to secure lasting benefit the treatment must be permanent; and to the question, can cretinism early diagnosed and treated be eradicated, we cannot at present definitely reply.

Cases **primarily neurotic** do better when withdrawn from home influences which are prejudicial (the common neurotic taint of parent and child often interacting injuriously). Placed under judicious management, much good may be done by suitable drill and manual exercises in overcoming the twitchings and nervous movements common in these cases.

With regard to **eclampsic** cases (the history of which will help us to a diagnosis) the prognosis varies with the severity of the consequences of the fits, but as a rule is not very favourable. The same may be said with regard to **epileptic** cases; but where epilepsy is associated with the lower grades of idiocy, the probability of organic lesions renders the prognosis unpromising. In milder cases of mental enfeeblement associated with epilepsy, the successful treatment of the epilepsy is followed by considerable mental improvement, and should the cessation of fits be permanent, the mental deficiency may gradually disappear.

Syphilitic cases* may be distinguished by the history and signs of inherited syphilis; though the taint is probably a factor in many cases of mental deficiency where its external manifestations are not obvious. In syphilitic cases developing symptoms of mental enfeeblement at the age of second dentition the prognosis is grave; progressive juvenile dementia, with paralytic and epileptoid seizures, usually leading to a fatal issue in the course of three or four years.

In the diagnosis of **traumatic** cases, the history of a fall or injury to the head must be critically accepted; but falls from careless nurses' arms, from an overturned perambulator, down stone steps, and severe blows on the head, are not improbable causes. The presence of external swell-

* See Plate V., fig. 2.

ing or hæmorrhage, or the occurrence of fits, soon after the accident, will be confirmatory evidence. The prognosis varies with the severity of the injuries and their consequences; and the influence of heredity to nervous disease must not be overlooked. We have seen mild traumatic imbecility entirely recovered from in the processes of growth and development; and the modern rosources of cranial surgery make the prognosis of this class of cases more favourable than formerly.

Of **emotional** cases, caused by shock and fright, there are many degrees. The history, of course, serves for their recognition, and the absence of the features of congenital abnormality, with persistent nervousness, and sometimes a peculiar scared expression, will help us in the diagnosis. Much good may be done by placing such a patient in a good environment with suitable training, which may gradually give him confidence in himself; and we have known children, who have been victims of shock, become after special education fairly useful members of society. Exposed to the rugged ways of public schools, where they will be jeered and scoffed at, there is much risk of mental deterioration.

Post-febrile or **inflammatory** cases are similarly diagnosed by the history, and the absence of congenital defect. Speaking generally, the prognosis is not favourable in this class of cases, though, of course, depending upon the amount of damage

the brain has sustained, or the degree of atrophy consequent on meningeal thickening. In some cases irremediable lesion may have been left; in others, the arrest of development from failing nutrition may under favourable circumstances be averted.

Toxic cases are recognised by ill effects occurring in a previously normal child, dosed with alcohol or opium. The lesions are of an atrophic character, and good result may follow withdrawal of the poisons and the substitution of nourishment appropriate to the child's age.

It is not pretended that we can refer all cases of mental deficiency to a single type. The majority, indeed, are of mixed types; but experience aids us in distinguishing, and assessing the value of, one factor and another in their combinations. Thus traumatism, combined with a neurotic family history is less hopeful as regards mental improvement, than when the history is good; and the physical prognosis of "Mongol" imbecility, with marked phthisical heredity, is most unfavourable.

The difference between **idiocy** and **imbecility** being one of degree and not of kind, it will suffice to say that the former designation is applied to the lower grades, the latter to the higher grades of marked mental defect, whether congenital or acquired. **Mental feebleness** (**"feeble-mindedness"** in the modern English sense) is distinguished by departures from the normal mental de-

velopment less marked than the above. Retarded mental development may amount to no more than mere "backwardness," and is best estimated by comparing the patient with a normal child of similar age. Thus tested, a boy of ten will sometimes be found on an intellectual level with the ordinary child of five; and if he has had equal advantages with the latter, we may fairly conclude he is "mentally-feeble." The physical accompaniments of this state, previously alluded to, such as developmental defects, nerve signs and low nutrition, will also aid in the diagnosis. Unfortunately there is sometimes associated with mental defect, particularly when not early subjected to proper training, moral weakness, apt to give much trouble in after life. As Dr. Blandford has well stated in his recent Lumleian Lectures at the Royal College of Physicians:—

"And first, of those who, through congenital defect, or as the result of disease in early life, are mentally deficient—not idiots, but weak-minded imbeciles — children in mind throughout life. They come before us in various ways. Though children in mind, they are very often men and women in wickedness and vice; and it may be necessary to place them under restraint, or to protect their property from being squandered and themselves from being robbed. I know no class over whom controversy is so likely to arise, or where we may have greater difficulty in forming a diagnosis. They are not idiots; many of them

have acquired a fair amount of education, can construe a Greek play, or master a proposition of Euclid. Their memory is excellent, and we cannot compare their condition with a former one; for they have never been any better, so that this test fails us. They have no delusions or hallucinations, and are not insane in the ordinary sense of the word. With regard to many there is no difficulty. When a man or woman of forty submits to be treated like a child of ten—to be taken out and amused, and to have sixpence a week pocket-money, we have not much difficulty in forming an opinion. But the development of others is not so low; yet they are deficient in reason and judgment, and often in conduct. There is a tendency to low and depraved habits, to brutish and sensual enjoyment, to low company amongst whom they are of more importance, and if remonstrated with they show an absolute disregard for truth or for right behaviour. Lawyers will defend these patients and say that they are not insane, and the celebrated Wyndham case shows what can be done by their aid. In examining any such individual we must consider his conduct in regard to his environment and bringing up. What might be passed over in the lower walks of life is, in the higher, evidence of a degraded mental state. Every case must be judged by itself, and the question must be asked, Is this person able to take care of himself and his affairs? But to sign a certificate is often very

difficult, as we may not ourselves witness the insane conduct, all of which we arrive at only by hearsay. It is not to be forgotten, however, that imbeciles are very prone to display violent explosiveness of their nerve centres, and this is specially likely to happen as they advance from the period of puberty to adolescent life."*

* "Lancet," April 6, 1895, p. 857.

CHAPTER V.

THE TREATMENT OF MENTALLY-DEFICIENT CHILDREN.

(*a*) GENERAL. (*b*) MEDICAL. (*c*) SURGICAL.

THE treatment of mentally-deficient children is essentially (to borrow a term from the French) *medico-pedagogic*. The physician, the teacher and the nurse, must all co-operate in the ameliorative process, and the judicious parent will best secure the interests of his afflicted child by placing him where the efforts of the three can be co-ordinated. As a matter of convenience, however, we shall consider in order, first the general treatment, including nursing and domestic management, and after that such treatment as belongs to the domain of medicine and surgery, reserving for a subsequent chapter matters educational.

Congenital defect in the young infant having been diagnosed, are there any means available for modifying its accompanying abnormalities? Much indeed may be done by a loving mother, who will be patient enough to persevere, in spite of apparently slight results, to promote sensorial development and co-ordinate movement, and, as months go on, to foster habits of cleanliness.

The faculty of attention, too, may be cultivated, the child being coaxed to fix its gaze on one thing at a time. The aid of music is serviceable in many cases, and even idiots will respond remarkably to congenial sounds, which they at length try to imitate, so that music is sometimes the stepping-stone to speech. Seguin well lays down the principles on which to proceed, in the following paragraph.*

"As soon as any function is set down as deficient at its due time of development, the cause must be sought and combated; if external, removed; if seated in the nervous apparatus, counteracted by the earliest course of training and hygienic measures. The arm of the mother becomes a swing or a supporter; her hand, a monitor or a compressor; her eye, a stimulant or a director of the distracted look; the cradle is converted into a class-room or gymnasium." It must, however, be remembered that the mother, if of neurotic temperament, is not the best person to conduct these infantile exercises; a judicious nurse, sympathetic, but not emotional, will have a better chance of success.

Amongst hygienic measures, of the first importance is **proper feeding.** An emotional mother should not, as a rule, suckle her child; in her place a healthy, strong-minded, wet-nurse should be employed, or judicious artificial feeding should be used. The risk of scurvy-rickets from the

* "Idiocy," New York, 1866, p. 88.

exclusive use of preserved food (as demonstrated by Dr. Thomas Barlow, in his recent Bradshaw Lectures) must not be forgotten; and fresh milk in some form should come into the dietary. As the child gets older, well-boiled oatmeal porridge (*par excellence* the food for bone and brain building), should be given it; and careful attention must be paid to the action of the bowels, which are apt to be sluggish, though sometimes there is a tendency to mucous flux. The **hygiene of the skin** is of importance, and frequent baths, with frictions, are beneficial in promoting cutaneous exhalation, otherwise often offensive, and in aiding the sluggish circulation. **Muscular activity** should be encouraged, and the child frequently laid on the "kicking-rug," and encouraged, by playful methods, to exercise its limbs.

Cleanly habits must be promoted by every possible means. It is a mistake to condemn the deficient infant to perpetual swaddling clothes; the aim should be to approximate as near as is practicable to the normal child, in costume as well as other matters. We have seen children of six swathed in napkins round their loins, reeking with offensive filth, to the great discomfort of all concerned, whereas methodical personal attention would have obviated the need of such expedients. Regularity in the relief of the bowels and the bladder should be early inculcated, and of course more frequent facilities are required than for ordinary children; but, except

in the case of degraded idiots, there is every prospect of cleanliness being attained by patient perseverance. The practice of wetting the bed is a common one with weak-minded people of all degrees, and sometimes there is a physical weakness of the urinary apparatus, which may be corrected by appropriate treatment. More frequently, however, these *lâches* are the result of inattention, and then moral methods, in the way of simple rewards and punishments, may advantageously be tried. One very simple remedy, partaking both of the physical and moral, is the restriction of the amount of fluid imbibed towards bed-time; and mentally-feeble children are often "thirsty souls." We do not approve of india-rubber urinals, and other mechanical arrangements, which only tend to perpetuate bad habits, any more than we do of the ingenious (?) method proposed by an Idiot Asylum Superintendent, of keeping his beds clean by the nightly administration of enemata to all dirty patients!

The **clothing** of mentally-deficient children requires consideration. As with others, it should be warm yet light, and free from constricting bands. Woollen undergarments should be worn in all cases where this is practicable; but with wet cases there may be a difficulty as regards the nether garments, and where frequent washing is necessary, swansdown or some such material may be substituted. Jaeger's natural wool in winter, and cellular cloth (the so-called "*Aertex*") in sum-

mer, form appropriate gradations as to warmth. With regard to the cut of clothes, this should conform as nearly as may be to the ordinary fashion; it is wrong to accentuate personal peculiarities by peculiar clothing. There is no good reason why boys of eight or more should continue to be dressed like girls, when kilted costumes or sailor's suits would be quite as convenient, and moreover, promote a sense of self-respect. Weak-minded children are often not devoid of all pride of appearance; and this, judiciously cultivated, may be made a powerful lever in the upraising of good habits. We have known a case in which a tendency to destroy clothing has been overcome, not by attiring the child in sackcloth, but by providing for it a fashionable suit!

Appropriate **exercise** occupies an important place in the management of the mentally-deficient child. From the first, plenty of pure outdoor air is essential to the child whose brain activity is diminished by the imperfect aeration of its blood, and as time goes on, such muscular exercise as it is capable of should by every method be promoted. From a false sense of shame the deficient member of the family is too often carefully concealed from the public gaze, and when this entails, as we have known instances, the segregation of the poor child to the limited area of its nursery, or at most to the seclusion of its "own back yard," it is a question whether the Society for the Prevention of Cruelty to Children might not advantageously

intervene! Teaching to walk will of course be a more tedious process than with ordinary children, but the faith which works by love will accomplish miracles, whereas neglect will too often entail permanent disability. Contractures of limbs, consequent on bad postures allowed to become permanent, are sometimes met with in the case of the mentally-feeble; and we have a vivid recollection of a poor boy of twelve, who having spent his childhood, like a modern Diogenes, in a tub (a sugar hogshead), was brought to us with his legs so hopelessly deformed by his constrained posture, that he was a complete cripple, though we afterwards succeeded in getting him to use a tricycle specially built for him.

But we must not linger on methods of exercise, which will be treated later; nor can we now enforce the importance of moral training, from the earliest age, in the formation of good habits, for this forms the subject of a future chapter. It must suffice to say that early home influences are specially potent for good or harm, in the case of the mentally-deficient child, and it behoves the parents of such to promptly obtain expert advice on the subject, as well as the aid of a well qualified and intelligent nurse or nursery-governess.

Dr. Langdon-Down in his Lettsomian Lectures,* for 1887, lays stress on the prevalence of "morbid sexual erethism" in mentally-deficient children of tender years, due oftentimes to the

* "Mental Affections in Childhood and Youth," p. 47.

nefarious practices of an unworthy nurse. Whilst happily our own experience does not point to this condition as a frequent one, yet the contingency must be borne in mind, and proper measures of precaution taken.

The approach of puberty is of necessity an anxious epoch as regards domestic management, and too much care cannot be exercised by those in charge of "feeble-minded youths" (of both sexes) to guard against abuses of the animal instincts then awakened. Employment in the open air will at this period be of special value; and for obvious reasons, sending to bed in the daytime, as a punishment, must not be thought of.

We now pass to methods in the treatment of the mentally-deficient child, which we may more especially designate MEDICAL. It has been already stated that such children are as a rule physically as well as mentally deficient; at any rate they are feeble in body as well as in mind; sometimes (as was said of one of our kings) "not only weak in the head, but also weak in the *understandings*." The limbs, as well as the brain, are imperfectly developed; and of course nervous defects and disorders are frequently met with. There is in many cases, moreover, a tendency to malnutrition, and a want of tone which renders its subjects specially liable to the inroads of infectious disease, and to parasitic skin affections.

We have already stated that a phthisical family history is extremely common with mentally-

deficient children. We shall not therefore be surprised to find in them a marked **predisposition to tubercular disease,** sometimes affecting the joints, more often the lungs, and occasionally—though perhaps less frequently than would be anticipated—the meninges of the brain. These causes account for from 50 to 75 per cent. of the mortality of Institutions for Imbeciles; whether or not the conditions of Institution-life contribute to this excessive mortality might be fairly argued. In all cases, however, it behoves the medical attendant to watch for, and guard against, the incipient symptoms of tubercular disease, fortifying the constitution against it by hygienic surroundings, judicious feeding, including a sufficiency of carbonaceous elements, and the administration of cod-liver oil, malt-extract, and Parrish's chemical food. Children of the Mongol type are specially liable to break down from exposure, and in cold weather are apt to suffer not only from chills externally but from internal congestions favourable to the development of tubercle bacilli. Scrofulous affections of glands, eyelids, bones and joints frequently occur, but of these the treatment will be considered under the head of *surgical.*

Mucous diarrhœa is an extremely common symptom, especially with "Mongols," and calls for care as regards feeding, and for suitable medication. We have found much benefit in these cases from the administration of a mucilaginous mixture of castor-oil, with the addition of minute

doses of opium. Sometimes small and repeated doses of grey powder or calomel are of service. Astringents, pure and simple, given too early, are apt to add to the intestinal irritation.

Epilepsy has been stated to occur in at least 25 per cent. of all weak-minded children. Its dietetic and medical treatment is consequently of much importance in the amelioration of the mental affections of youth, which it is sometimes the cause of, and always tends to aggravate. Our experience leads us to favour an exclusively milk diet in these cases, or at any rate a diet containing but little meat, and that well cooked and minced, so as to avoid the risk of peripheral irritation from large morsels being "bolted." A highly nitrogenous diet probably conduces to an explosive condition of nerve-cells, and is on that account to be avoided, but a restricted diet may at the same time be amply nutritious. As regards drug treatment the idiocyncrasies of each case must be studied, and whilst some are beneficially influenced by bromides, others will do best with borax, or a mixture of the two. Dr. William Alexander, of Liverpool, records* considerable success in cases treated by the following mixture:—

℞ Sodæ Biborat. gr. 200.
Sodii Bromid. gr. 50.
Syr. Simp. ʒj.
Aquam ad ʒx. M.
Ft. Mist.
ʒj. t. d. s. ex aquâ p. cib.

* "Liverpool Medico-Chirurgical Journal," July, 1893, p. 280.

Dr. E. C. Seguin, of New York, speaks highly of persevering treatment, extended over some years, by the following combination :—

℞			
	Chloral. Hydrat.	ʒij.	
	Sodii Bromid.	ʒx.	
	Aquæ	ʒvij.	M.

1 or 2 teaspoonfuls largely diluted to be taken three times a day.

In some cases a simple solution of bromides (sodium in preference to potassium) suffices; but care must be taken that depressing effects are not produced, and when acne occurs, the temporary administration of arsenic is useful. If there be a syphilitic element in the causation of the epilepsy, bichloride of mercury combined with bark, may be of benefit. In *petit mal*, which is perhaps more often associated with mental enfeeblement than *grand mal*, and has a less hopeful prognosis, Seguin speaks well of "combining with a very moderate bromide course the free use of strychnine and atropine or belladonna." *

More important than drug treatment is what one may call the **"out-door occupation cure."** The experience of the Royal Albert Asylum, and more recently of the Epileptic Colony, at Chalfont St. Peter's, is quite emphatic in this direction. Mere loafing in the open air is to very little purpose; the occupation is the predominant factor for good.

The most striking advance in the medical treat-

* "Treatment and Management of Neuroses," *New York Medical Journal*, May, 1890, p. 31.

ment of mental, in conjunction with bodily, defect is that of **sporadic cretinism.** Up to the year 1890, this was justly thought to be a hopeless form of idiocy; but the experimental researches of Victor Horsley and others, encouraged the view that benefit might be derived from the implantation of the thyroid gland of the sheep in such cases. Subsequently it was found that the injection of thyroid juice was of equal efficacy; and later, that the ingestion by the mouth of the gland itself (or its preparations) was the best and most efficient mode of treatment. Numerous cases have been published recording successful results, mental awakening proceeding *pari passu* with physical development in a manner almost startling; and those interested in the subject are referred to an article by the author in Wright's "Medical Annual," for 1895, p. 324, *seq.* The adjustment and regulation of the dose appropriate to each case, so as to avoid stomach irritation, excessive temperature, and undue emaciation, are the points calling for attention; and so far as we can judge from present experience, the treatment (though in modified doses) must be permanent. Starting in children with one of Burroughs and Wellcome's five grain tabloids daily, the dose may be cautiously increased up to five tabloids, and when improvement has been achieved, one or two tabloids per week will usually suffice to maintain it. The annexed Plate VI., for which we are indebted to the courtesy of Drs. Railton and

PLATE VI.

SPORADIC CRETINS.

Fig. 1. Before Treatment.

Fig. 2. After Treatment.

Telford-Smith, shows the condition before and after treatment of two brothers, one of whom was formerly under the author's care at Lancaster.

The majority of mentally-deficient children being of feeble constitution, the prognosis of the **exanthemata,** and of acute disease generally occurring in such, must be guarded, and any depressing treatment is inadmissible. Cerebral complications are frequent and convulsions not uncommon. Troublesome sequelæ affecting mucous membranes (in the eyelids and elsewhere) are apt to occur after measles, which in our experience is a disease almost as formidable as scarlatina with the imbecile class. The irritability of mucous membranes is at all times a source of trouble with mentally-deficient children, and catarrhal discharges from the eyes, nose and ears, have to be treated with astringent lotions. **Spongy gums** are frequently found, especially when the hygiene of the mouth is not attended to, and chlorate of potash washes are useful in these cases. **Aphthous patches,** and **parasitic diseases of the skin,** must be treated by appropriate remedies. Curious **skin affections** of neurotic origin are sometimes met with in cases of mental feebleness, such as that described by Dr. Pringle, and others, under the name of "Adenoma sebaceum."* Phthiriasis is occasionally met with.

A few remarks as to SURGICAL treatment in re-

* "British Journal of Dermatology," Jan., 1890.

lation to mentally-deficient children must close this chapter. The contractures of limbs may sometimes be remedied by tenotomy, but the deficiency of reparative power, and the difficulty found, at any rate with lower grade cases, as to keeping appliances in position and free from filth, must be borne in mind before undertaking a surgical operation. For the relief of constitutional irritation, such as that caused by bone or joint disease in scrofulous cases, operative interference is quite justifiable and is generally successful. We have recently seen considerable benefit to mental activity from the clearing away of post-nasal adenoid vegetations in a feeble-minded child.

Since 1890 the operation of **craniectomy** (*i.e.*, the cutting of strips of bone from the cranium) has been recommended and practised in cases of microcephalus. "In a case of congenital microcephalus, when the small skull is simply moulded to the brain, which has been arrested in its development at a stage corresponding to that of the fifth month of intra-uterine life, it would seem futile to expect that cerebral development would be fostered by cutting chinks in the skull, which after a short period would be filled up by bony matter apt to encroach upon the cranial cavity. In the light of numerous autopsies, described by Bourneville and others, the theory of premature synostosis, as a common cause of microcephalus, must be given up, and operations based on this

theory abandoned."* Whenever signs of pressure present themselves, however, and in the rare cases in which there is a history of prematurely ossified fontanelles, operative interference is justifiable; and now-a-days the mortality of craniectomy is but small. There is no doubt that beneficial results have been frequently obtained by cranial operations in cases of mental deficiency associated with traumatism, epilepsy, and paralysis; and in such cases surgery should not be deferred until after the establishment of serious atrophic changes and degenerations.

* See article by Author, "Medical Annual," 1895, p. 327, Wright, Bristol.

CHAPTER VI.

Educational Training.

We now pass to the consideration of means, which, as distinguished from general treatment, we may designate **Educational.** Under this term we include all those methodical and specific exercises, whether physical or mental, which naturally fall into the school routine, and need for their direction a skilled teacher, acting in concert with the physician. The kind and amount of educational exercise appropriate to a particular case of mental deficiency or feebleness should indeed be prescribed by the latter, and consequently a cursory sketch of the teaching *technique* adapted to characteristic varieties, may not be out of place in what aspires to be essentially a medical work. As a matter of convenience, industrial and moral training, though forming integral portions of the educational system, will be considered in subsequent chapters.

In dividing educational means into (*a*) **physical** (those more particularly addressed to the body), and (*b*) **mental** (those more particularly addressed to the intelligence), we must bear in mind that the two are not independent of each other, and

that with regard to mentally-deficient children especially, "the physiological education of the senses must precede the psychical education of the mind."* We may add that the training of the muscular system to ready and regulated response, is merely an extension of sensorial training; and both these processes naturally precede, and prepare the way for, more purely intellectual training. It has been well remarked by Froebel that "in primary education, the Doing, the Thing Done, the Teaching and the Learning must, in every case, rest on actual fact and on real existence, so that the mental intelligence incessantly striving upwards in single things, as in its general career, may thereby expand and develop the life-giving creative power of the pupils, according to the measure of their strength and ability, their talents and desires."† The mentally-feeble child is specially incapable of comprehending abstractions: all instruction, therefore, must be presented to it in a concrete form, which it can not only see, but when possible grasp in the hand as well as in the mind. Many of the "games" and "occupations" of the kindergarten are consequently of service, but whereas the normal child exercises its own spontaneous activity through these occupations; those who are mentally-deficient, especially those of the

* Seguin "New Facts, &c.," p. 41. New York, 1870.

† Froebel's "Letters on the Kindergarten." Swan, Sonnenschein and Co., 1891.

apathetic type, have to be stimulated to action by the force of imitation. Our system of education, then, starts on physiological lines, first addressing itself to the **culture of the external senses,** then to the **co-ordination of muscular movement,** and finally to the promotion, by imitative and other exercises, both of the **manual and mental activities.**

In thus laying down these general principles of procedure it must not be imagined that all cases can be treated in the same way. On the contrary, it is essential to success that the teacher should study the individual peculiarities of each case, and adapt the educational methods employed to the peculiarities. Mentally-abnormal children may be broadly divided into two main groups; (1) those who are **dull and apathetic;** (2) those whose **nervous and mental action is irregular.** It is obvious that the rousing, stimulating *régime* suitable for the former, is not that most appropriate to the latter, in which the inhibitory and co-ordinating functions require to be strengthened by exercise.

As extreme examples of the first group we may instance the "impassive, low grade idiot, whose education begins with a bombardment of bean-bags. Such a child is so inert as not at first to put up its hands to protect its face from the bean-bag thrown at it by the teacher; gradually, however, the instinct of self preservation asserts itself so far as to ward off the missile,

The second step, to catch the bag, and the third, to throw it back to the teacher, mark successive steps of improving mental activity; and from these progress is made in the direction of simple drill, aided by music."* The bean-bags referred to are about five inches square, made of bright coloured flannel, and loosely filled with beans or maize, so that their impact is not hurtful. The same sort of exercise, varied by aiming the bags so as to pass through round or square holes in a board, or into the mouth of a grotesque figure, is excellent for promoting alertness of the eye and hand, as well as concentrating attention, in higher grade children.

Amongst children of the second group we include those with evidences of an over mobile nervous system, or with uniform repetitive movements, such as those designated *athetosis*. The golden rule in these cases is—try to substitute in place of purposeless, irregular movements, motor exercises with a definite purpose, and calling for will-power. In this way inability to fix the attention (*aprosexia* as it has been called) is gradually overcome, and the moral satisfaction resulting from "something attempted, something done," encourages to fresh efforts. In cases where nervous irritability is so great as to give rise to destructive tendencies, the irregular energy should

* See paper by Author, "On Points connected with the Education of Feeble-minded Children," *British Medical Journal*, Sept. 8th, 1894.

be turned into constructive channels; thus a child of this temperament may be coaxed to build up wooden bricks into some definite form for the pleasure of knocking them down with a crash! Gradually he may be led on to practise building for its own sake. The child with incessant movements of his fingers (*athetosis*) is usually not greatly wanting in will-power, and it is marvellous how much may be achieved by appropriate finger exercises (such as those of the **peg-board,** see fig. 1), or the more interesting kinder-

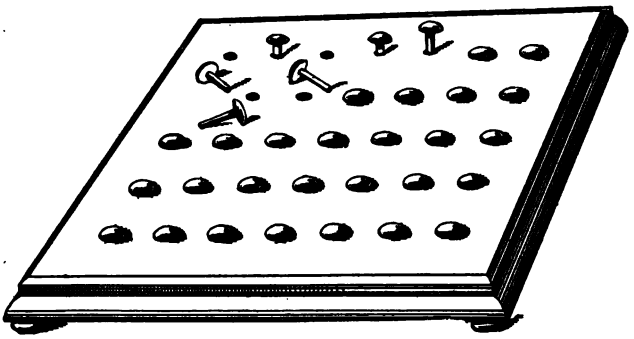

FIG. 1.—Peg-board.

garten occupation of "picture perforating." The intelligent teacher will know how to adopt, and adapt to the use of the deficient child, the various educational means now in vogue in our infant schools. It must, however, be borne in mind that much that the normal child learns intuitively needs to be taught specifically to the former. The external senses are often functionally in-

active, if not structurally defective, and it will be necessary to open up, by a series of sensorial exercises, these obstructed avenues of approach to the central intelligence. Then the due co-ordination of muscular movement must be strengthened and regulated by judicious drill. Finally, the general intelligence must be cultivated by interesting the child in its surroundings, and breaking down the isolation in which the solitary idiot, and to a lesser extent the mentally-feeble child, carry on their existence. All this preliminary work of necessity precedes instruction in the "three R's," and what we are accustomed to regard as ordinary school work. We rejoice, however, to find that the physiological sequence we have indicated, and which was laid down by Seguin half a century ago as *the* educational mode for defective children (as well as for others) is gradually being recognised in the curriculum of elementary schools. We do not venture to trespass upon the domain of pædagogy further than to point out the special methods of instruction indicated to meet the special requirements of pupils, who by reason of mental defect (often associated with physical) cannot "properly be taught in the ordinary standards, or by ordinary methods."

And first with regard to **sensorial training,** it will be convenient to consider separately the several senses, though in practice the training will be of a combined character.

The **tactile function** is not only the most general, but in some respects the most important of our senses, and in the normal baby its evolution takes precedence of the rest. Impressions through the eye and ear are criticised through the sense of touch, and this natural development, so serviceable in the spontaneous education of all healthy young animals, must be imitated in our endeavours to bring up towards the normal standard the sensorial training of imperfect children. In some cases we shall find coarse insensitive hands, which must be drilled into sensibility by grasping hard and soft objects, and discriminating the resistance and surface impressions of such varying substances as polished marble, sand paper, velvet, silk, &c. Sensibility to heat and cold may be gauged and cultivated by the handling of bottles filled with water of varying degrees of temperature. Such lessons will of course form incidents of the object lessons which play so important a part in early education. In some exceptional cases there is a morbid sensibility (*hyperæsthesia*), which is best counteracted by friction against hard substances, and the employment of the fingers in coarsish work.

The use of the **peg-board** (fig. 1) has already been mentioned as serviceable in cases of *athetosis* (spasmodic finger movements): it is also valuable in cultivating the tactile sense. Similarly **size and form boards** (figs. 2 and 3) promote accuracy of grasping movements, and a pin cushion

covered with spotted material, into the spots of which the child sticks pins, is useful in exercising minute sensation, as well as fine adjustment of

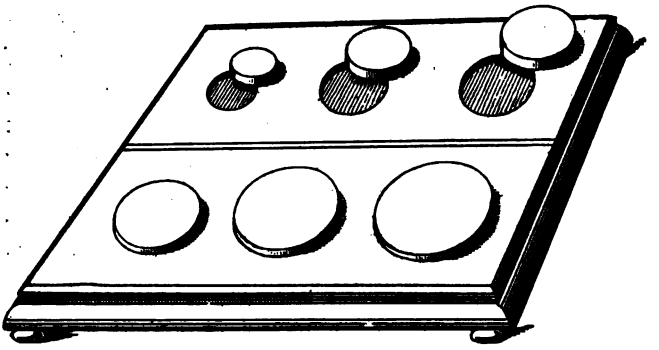

FIG. 2.—Size-board.

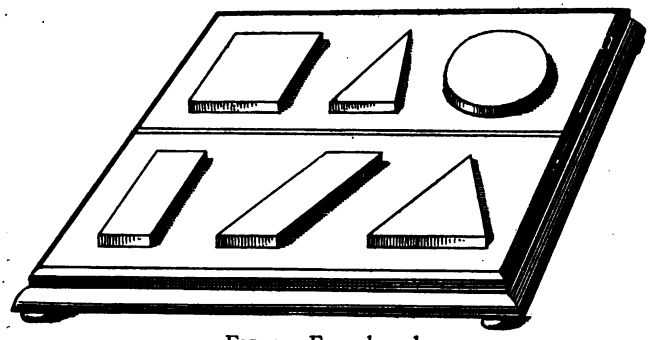

FIG. 3.—Form-board.

the muscles. Stringing beads and buttons serve not only as exercises of the tactile sense, but as will afterwards be pointed out, of the arithmetical faculty.

The sense of **sight** comes next in importance to that of touch, as regards training. Ocular defects must of course be treated by the surgeon: the teacher's function is to concentrate the wandering gaze, to specialise the vacant stare of the defective pupil. To quote a quaint Gallicism of Seguin's, "the main instrument in fixing the regard is the regard;" that is to say, the vagrant eye of the pupil may be brought to attention by the fixed gaze of the instructor. Glittering objects, such as the silvered globes used for Christmas trees, are serviceable also for this purpose, especially with very young children, and the kaleidoscope is an attractive toy of distinct educational value for older ones. The independent movement of the eyeball, apart from that of the head, should be made a point of; the training of the ocular muscles is too often neglected, with the result that the child's lateral range of vision is unduly restricted. Discrimination of colour is a later exercise of the visual organ; and for this purpose discs of various colours for the child to match, cubes, the sides of which are vari-coloured and are successively turned uppermost, following the lead of the teacher, and a series of cups and balls, to be fitted together in corresponding colours, are useful aids. But perhaps more interesting to the juvenile mind is the matching of coloured ribbons and articles of clothing, or pointing out corresponding hues in coloured pictures. Exercises in colour perception

naturally lead to the distinguishing of colours by name, but the former take precedence in sensorial training. The teacher or nurse should not therefore commence by asking the child *which* is red, blue, &c., but the colour sense should be exercised by getting the child to sort into separate heaps the several discs or pieces of coloured cardboard. Matching coloured wools, and finding cards corresponding in colour to the squares on the colour

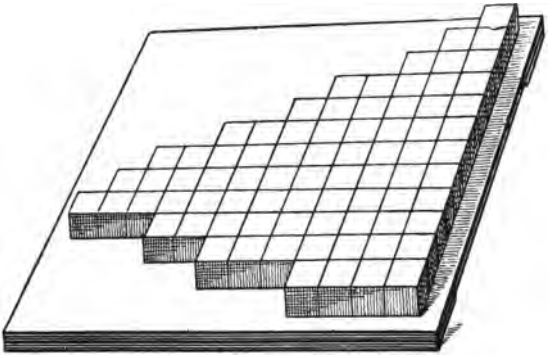

FIG. 4.—Graduated wooden rods.

chart, are other useful exercises. The forming of pictures from picture cubes is a more advanced form of eye training, and the use of **size and form boards** (figs. 2 and 3), and of the **graduated wooden rods,** to be arranged in step-like series (fig. 4), exercises both hand and eye, and imparts ideas of form and dimension. Ideas of relation are similarly imparted by exercises with **domino boards** (fig. 5), two of which

are placed (*a*) flat together, one at right angles (*b*) to the side, (*c*) to the end of the other, following the leader.

Taste and smell, being essentially animal rather than intellectual senses, do not as a rule require much culture in the mentally-deficient class.* But discrimination may be exercised by

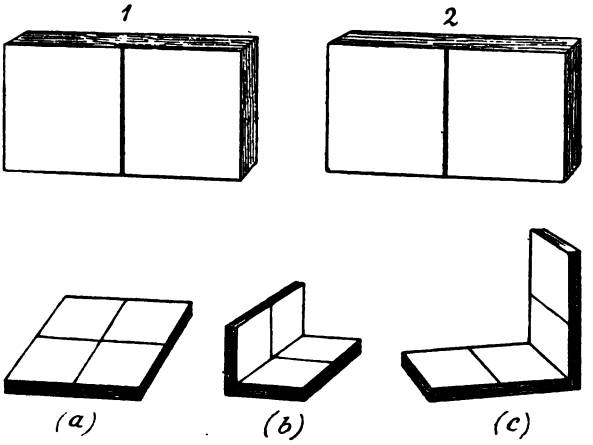

FIG. 5.—Domino boards.

offering to the pupil substances of similar appearance such as salt and white sugar to be distinguished by taste, ground coffee and snuff to be distinguished by smell.

* Perverted and abnormal states of these senses are occasionally met with in idiots; we have known one whose peculiar "taste for literature" was manifested by his "devouring his book," cover and all; and another who distinguished his own and his comrades' clothes solely by the sense of smell!

Hearing is sometimes apparently deficient when the real deficiency is that of attention. Mentally-feeble children often hear perfectly well, but do not take the trouble to listen; they may, however, be coaxed to do so by presenting to them agreeable sounds. Fortunately music has for this class special charms; and a simple song will often enlist attention when mere speech is disregarded. Nursery ditties are consequently not without educational value, and, as we shall see later, often form stepping-stones to speech. Tone-deafness is sometimes met with, and if low pitched sounds are not apprehended, those that are more shrill (such as those produced by the whistle) should be tried. At a later stage the discrimination by pupils of the different quality of sounds produced by different instruments is a good exercise.

Speech is a complex function, having important relations to auditory perceptions on the one side, and on the other being dependent upon the integrity of nerve centres and tracts, and the due co-ordination of the muscular apparatus concerned in vocalization and articulation. More or less imperfection of speech is extremely common with mentally-deficient children, and when not the result of want of development or lesion of the cerebral speech centre, much may be done in the way of amelioration by appropriate training. Excluding cases dependent on deafness (in which lip-imitation methods are of much value, and the

"oral method" has a literature of its own), we may say that, as a rule, such children require to be taught to speak much as a baby learns to speak. In some cases, however, a course of lip and tongue gymnastics is an essential preliminary. The pupil may be unable to bring the lips together, to bring the teeth together, or to direct the tongue as required for the formation of a sound. In such cases special exercises adapted to the special infirmity are requisite. To improve the power of closing the lips, a flat piece of boxwood, or an ordinary penholder stick may be held by the child between his lips for a few minutes at a time; and this is an exercise useful in repressing slavering. Blowing a whistle is also of service. Opening and closing the mouth so as to bring the teeth together; putting out the tongue, deviating it to the right and to the left, and touching with it the teeth of the upper and the lower jaw respectively, also the roof of the mouth, are other forms of oral exercises serviceable in overcoming defects of co-ordination interfering with clear articulation.

As a rule consonant sounds are more readily acquired than vowel sounds. The normal infant starts its attempts at speech by repeating the simplest *labials* or *linguals:* "bab-ba," "mamma," and later "dad-da," are amongst its earliest efforts. Following these lines, the child deficient in speech should be exercised in simple re-duplicated consonant sounds followed by the open

vowel *a* (*ah*). A schedule of speaking exercises based on these principles was published by the author in an article on the "Educational, &c., Training of Idiots and Imbeciles" in Hack Tuke's "Dictionary of Psychological Medicine."* In this the repetitive phonetic (as "*mam-ma*") is coupled with name of a common object ("*mat*," "*man*"), of a part of the body ("*mouth*"), and of part of dress ("*muff*," "*mitten*"), beginning with the consonant sound (*m*); and so on through the series of labials, linguals, labio-dentals, gutturals and nasals. There is also a table of vowel sounds and examples. But for the present work it must suffice to say that with mentally-deficient children half the battle is to sustain their interest, and mechanical exercises in speaking, however well devised, must be brightened up by illustration. The naming of objects in well chosen pictures,† and of the child's own surroundings, and the imitation of the characteristic cries of animals, are some of the best means of making a start with speech. A child will demur to repeat sounds read by a teacher from a table, though he will cheerfully respond to the questions, "What does the cow say?" ('*Moo*'), or, "What does pussy say?" ('*Mew*'). Similarly he will imitate the "*Ba-ba*" of the sheep, or the "*Bow-wow*" of the dog, and thus unconsciously learn both consonant and vowel sounds without an effort.

* Churchill, 1892. Vol. ii., p. 673. (See Appendix C).

† Dean's "Book of Objects" is recommended.

It has already been remarked that with the feeble-minded, music is often a stepping-stone to speech. Such children will frequently hum tunes that take their fancy before they are able to articulate words; but if attractive tunes set to words containing repetitions of simple sounds (such as the "Ba-ba black sheep" of our old Nursery Rhymes*) are constantly repeated to them, the probability is that after a time, first one word and then another will be taken up by the pupil, till the rhyme as well as the tune is known.

We pass from the cultivation of speech, which occupies an intermediate place between sensorial training, and the co-ordination of muscular movement, to a consideration of the exercises more especially addressed to the latter, which we include under the comprehensive designation of **drill.** With children of deficient bodily as well as mental development, physical training is serviceable not only for muscular growth and co-ordination, but, inasmuch as it demands prompt obedience, for strengthening the faculty of attention. The movements must be gentle and adapted to individual capacities and even *incapacities;* mere "tours de force" are inadmissible. Musical drill is to be preferred whenever practicable, and there are now many excellent manuals on this subject, such as Gill's "Physical Exercises," Alexander's "Musi-

* Elliott's "National Nursery Rhymes" is recommended for this purpose.

cal Drill for Infants," &c., which may be advantageously used for exceptional as well as ordinary children. Light wooden dumb-bells, wands and rings, are the simple apparatus required. For special infirmities, however, such as we frequently meet with in the mentally-feeble, special exercises have to be devised for particular cases; and the want of balancing power many show is overcome by "toeing the line," by walking the plank, by stepping first between the broad bars of a ladder laid horizontally on the ground, and then from bar to bar. Deficient grasping power is strengthened first by the bean-bag exercises previously referred to, then by bar-bells, and finally by supporting the weight of the body on parallel bars, or from the bridge-ladder.

Though scarcely gymnastic, **dressing lessons** may be given with advantage as class exercises to children inexpert in putting on their clothes. Buttoning, lacing and tying bows and knots, bring into play fine adjustments of the fingers frequently deficient with the mentally-feeble.

With regard to the more *ordinary school exercises* we can only indicate a few points in which special stress should be laid in the case of mentally-feeble children. "*Facta non verba*" should be the guiding principle; things done will make much more impression than things merely said; and whenever practicable, lessons should be illustrated by objects, for as was remarked by Horace:

> "Segnius irritant animos demissa per aurem
> Quam quæ sunt oculis subjecta fidelibus."

Mere parrot-like repetitions of matters committed to memory should be discouraged; nothing should be learned by rote which is not understood, otherwise much labour may be lost, and at length we may find (with Longfellow) that

> "In an idiot's brain remembered words
> Hang empty mid the cobwebs of his dreams."

Object lessons must start from the simplest facts within the child's observation. The names and uses of the sense-organs, of the limbs, of articles of clothing, of the furniture of the room, are some of the subjects upon which the child's intelligence should be exercised.

Drawing and writing are best taught in the elementary stage by large-scale exercises on the black-board chequer. Drawing lines vertically, horizontally and obliquely, between points marked by the teacher, and afterwards delineating common objects, under which the names may, with help, be printed and written,* pleasantly lead the child on both to **writing and reading,** and with regard to the latter it may be remarked that the "*word-method*" is to be preferred to the old-fashioned plan of beginning with the drudgery of the alphabet.† Of course the names of letters are learned at a later stage, words being dissected for this purpose with the aid of the letter-box.

* See "Reading Made Easy," Anna Snell. Philip and Son, London.

† Gill's "Regina Reading Sheets" are useful.

Calculation is the *crux* in educating the mentally-deficient. Counting (so-called) may be glibly done without any apprehension of the meaning of figures; consequently the concrete must always elucidate the abstract. Many excellent aids are published for this purpose, pictorial and otherwise; but the ingenious teacher will not be dependent on these, as the child's own fingers, the pupils in class, &c., are always available for demonstration. Shells, beads and the abacus are also convenient objects for counting. To elucidate the value of weights, money, and to teach simple calculation, there is nothing better than the "shop-lesson," an elaboration of the nursery game of shop, in which common groceries are weighed out and paid for by the pupils, problems in change being practically tackled.

Industrial training is intimately interwoven with educational processes, but we specially treat of it in the next chapter.

A list of School-books and Appliances found serviceable in the special instruction of mentally-deficient children is given in Appendix B.

CHAPTER VII.

Industrial Training; and Recreation.

To complete the educational fabric appropriate to mentally-deficient children, the woof of **industrial training** must be closely interwoven with the warp of scholastic exercises, and a wholesome moral influence must be the pattern pervading the whole. In the present chapter we offer some hints as to special modes of industrial training found useful.

The "occupations" of the Kindergarten form attractive and serviceable preliminaries to handicrafts. "Paper-weaving," for instance, is an excellent preparation for the more prosaic industry of stocking darning, and the "pricker" used for perforated pictures will serve as an introduction to the cobbler's awl. Useful as are Kindergarten occupations for training the fingers, and, through them, the intelligence, the actual products of child-labour in the way of bead necklaces, variegated paper mats, pretty models, &c., have a distinct value in stimulating further effort, as the principle of achieving a tangible result is specially satisfactory to the mentally-feeble child. In this respect, industrial training has an advantage over mere book learning, and it has been well

remarked that feeble-minded children learn more with their hands than with their head.

The kind of employment most suitable differs with the particular characteristics of each case. With the majority, out-door work is the best whenever practicable, and we have repeatedly seen both physical and mental development set going by such healthy occupation, when indoor teaching and employment had proved unavailing. Careful supervision is of course needed; otherwise, if put to weed a garden the child may ruthlessly root up plants as well! The love of seeing things grow, however, should be fostered, and the child will soon watch with interest how the seedling gradually becomes the plant. Growing mustard and cress on moistened flannel is one of the demonstrations which delight the pupils of the London School Board special classes. Kindness to animals should be inculcated; and, when this exists, occupation at a farm is often beneficial, much interest being taken in the stock.

To town-bred children, unfortunately, such occupations as these are not open. There are, however, many varieties of manual training, now commonly practised in connexion with our public elementary schools (and in some private classes) in which the mentally-feeble may participate. Cloth and cane weaving, simple hand-basket making, rococo work, sash-line plaiting, are some of the arts easily acquired, which furnish a very pleasing result; and the same may be said of

Macramé work, which in our experience is an excellent exercise for those subject to finger twitches. We have elsewhere remarked that these athetotic patients frequently possess graphic and artistic ability; and for such, woodwork and even wood-carving form congenial employments. It is marvellous how by persevering exercise of will-power, such pupils gradually overcome their spasmodic movements, and are at length able to execute quite fine work with the chisel and graving tool. Girls with athetoid affection often become, under training, good needlewomen, putting in their stitches with great regularity. The mysteries of knitting, crochet and other fancy work are also mastered by them; and we have seen a mentally-feeble girl, crippled as to her right hand by spastic contractures, do fine-art needle-work with her left.

The practical needs of after-life must of course be borne in mind in selecting a particular employment. The gentleman's son, though comfortably provided for, will be all the happier for having an occupation to turn to; and for such, carpentry, wood-carving, and even turning are good indoor pursuits, whilst gardening and farming are specially appropriate. Young ladies who by reason of their feeble-mindedness will be to some extent debarred from the ordinary pursuits of society, should be encouraged to take an interest in domestic matters and to assist in the still-room. They may also employ themselves in a variety of

fancy work; and if they possess any artistic or musical tastes these should be cultivated.

For children of the working class some occupation which they can carry on under the eye of their parents is desirable. If they live in the country they should be trained for agricultural labour, or to assist in garden work. If in town, some work which they can practise at home, or in *small* establishments, such as cobbling or tailoring, basket or door-mat making, should be taught them; for obvious reasons they are unfit for factory work. Girls should be trained to work in the house and the laundry, and to make garments. Many imbeciles who have been brought up in Institutions are quite capable of earning their living under favourable circumstances, but the "*res angusta domi*," and (too frequently also) parental incapacity, are *not* favourable circumstances, and consequently, if discharged to their own homes, there is much risk of training being thrown away. This is one of the arguments in favour of custodial working-homes being instituted by the County Councils for mentally-feeble children capable of useful industry.

Recreation.– For mentally-feeble, as well as other children, the maxim "*ne quid nimis*" is especially appropriate. Study and occupation must be varied; and relaxation is essential. But care must be taken that relaxation does not degenerate into loafing; suitable recreation must be supplied. Mentally-deficient children, particu-

larly those of lower grade, are apt to be solitary; they have no idea of combination, even for games. Games of ball may, indeed, be practised alone, but they are much more useful when played with others in the form of rounders, cricket, hockey, or tennis. Football can only be played under special conditions—neither Rugby nor Association Rules; it forms a valuable exercise for the lower limbs. Even golf may be played by feeble-minded people. Games at marbles are good for finger training. Trundling hoops, playing horses, &c., should also be encouraged. Skipping is an excellent exercise for boys as well as girls, so long as the heart is all right. The game of battledore and shuttlecock is good training both for hand and eye. Of indoor recreations, dancing is to be specially commended as tending to improve carriage and diminish the tricks of gait which often mark the mentally-deficient. "Musical Chairs," "Post" and other similar games promote both activity and intelligence. Bagatelle is a good indoor diversion, the scoring being of educational value; and dominoes give ideas of number. The "children's hour," so valuable an institution in normal nurseries, is specially useful with the mentally-feeble, who often require to be *taught* to play, and sleep better for the romp before retiring.

The love for music which is common with the mentally-feeble, suggests attendance at concerts and at musical services as appropriate modes of

enjoyment. With some, a considerable sense of humour exists, and theatrical performances, especially when abounding in comic situations, are much appreciated. It is of importance that entertainments, at which mentally-deficient children are present, should be of a refined character. Coarse buffoonery and scenes of violence—provocative to some weak minds of imitation—should be carefully avoided. Even our old friend "Punch" is not altogether unexceptionable for a feeble-minded audience!

CHAPTER VIII.

Moral Training.

If good **moral training** be a prime essential in every system of education, it is specially so in the case of mentally-deficient children. Not that the mentally-feeble child is by nature morally worse than the ordinary child, but his weakness makes him more pliable, and an evil example—not to say precept—may in his case be specially injurious. It is a curious and lamentable fact that when the inhibitive nerve power is weakened, either from disease or from original defect, the lower nature is apt to assert itself, both in deed and word; and it is sometimes a matter of surprise how mentally-feeble persons, notwithstanding good surroundings, give vent to the most evil language, profane or obscene. Even the hasty word, carelessly uttered, may be taken up by the weak-minded child, and reproduced on some inconvenient occasion. Great care therefore should be taken by all in charge of such cases to be choice in their language, as well as correct in their conduct; for imitation is characteristic of the class. On the other hand a good moral influence is insensibly exercised by those who are

judicious, and the choice of a teacher or attendant is a matter of supreme importance, moral as well as mental qualifications calling for consideration.

As regards **moral discipline,** coaxing, not coercion, must be the guiding principle. With the mentally-deficient especially, "force is no remedy," the "cowed" child will be a cowardly child, with no pluck or spirit to advance itself. As Roger Ascham remarks with regard to the ordinary pupil, he must in no wise be "beaten into the hatred of learning;" and not only in the scholastic but in the general management of the mentally-deficient child, love must be the all-pervading principle. At the same time judicious firmness must be exercised; and consistency in word and deed, combined with tact, are essential to moral influence. The mentally-feeble, like the ordinary child, soon finds out to whom he must render prompt obedience.

A system of rewards and punishments, modified of course to meet individual peculiarities, is efficacious with this class, as with others. Mentally-deficient children are frequently eager to obtain the commendation of their superiors; and sometimes withholding commendation will make sufficient impression, at others words of reproof are necessary. Corporal punishment is rarely beneficial; yet there are cases where pain wantonly inflicted on others is appropriately visited by pain inflicted on the offender. Sometimes an appeal to the

mind is best made through the stomach; thus the cutting off of some favourite article of food (*e.g.*, pudding or sugar) from the day's dietary, will mark disapproval better than any other mode. The deprivation of some looked-for pleasure, such as attending an entertainment or going to church, will be efficacious in many cases; as with younger children will be the temporary forfeiture of some favourite toy. Older cases occasionally (perhaps exceptionally) develop a keen interest in the value of money, and such are best touched by an abatement of their allowance, or the enforcement of a fine.

With the growth of intelligence it must be pointed out that harm, followed by punishment, inevitably results from evil-doing, and that

> "Though the mills of God grind slowly, yet they grind exceeding small;
> Though with patience He stands waiting, with exactness grinds He all."

The weak-minded person is not to be encouraged in the notion—but too easily taken up with dangerous consequences—that, because he is not quite like other men, he is less responsible for his actions. From foibles he should of course be guarded; and he should learn to respect his neighbour, and act on the legal maxim, "*Sic utere tuo, ut alienum non lædas.*" It would be out of place here to discuss the question of the legal responsibility of the mentally-deficient; the author has elsewhere argued that moral responsibility, at

any rate, varies with the kind and the degree of the deficiency.*

Perhaps the most trying case we are called on to deal with amongst children mentally-abnormal —there is in this instance often but little intellectual deficiency—is that of the **moral imbecile.** The despair of his parents, the *bête noir* of the institution, the perplexing puzzle of the jurist—he seems to be the ill-fated product of inherited nervous instability and ancestral criminal instincts. He (or she) may combine the most innocent, sometimes engaging, external appearance, with an inner depth of cunning and iniquity which requires to be experienced to be appreciated. The sudden impulses to mischief occurring in these cases are probably of an epileptoid character, and paroxysms may sometimes be cut short by bromides. But as a rule moral discipline is of little avail; punishment may be administered, and professions of penitence called forth, only to be forgotten as soon as the mental disturbance again recurs. The author has a vivid recollection of three nice looking children, sisters and brother, formerly under his care, who at times would appear models of propriety, while at others they had all the characteristics of little demons. With innocent expression they would furtively accomplish the most abominable mischief, and after meekly acknowledging the error of their ways,

* "Legal Responsibility of Educated Imbeciles," *Journal of Mental Science*, vol. xxix., p. 467.

would emphasize their apology by a missile flung at the head of the person who had attempted to bring them to repentance! Such children would in old time have been called "possessed;" now they are classified as cases of moral imbecility, or juvenile insanity. Dr. Samuel J. Fort has recently described similar cases under the title of "Psychical Epilepsy."*

In other disappointing cases we find considerable improvement in intelligence and manual skill with actual deterioration of the moral sense. Intelligence and skill which have been acquired are, indeed, used for evil purposes; and the late Dr. Kerlin, the able Superintendent of the Pennsylvania Institution, who paid much attention to this class, came to the conclusion "that to educate them often gave them added power for evil, and that they should not be allowed to prey upon society." He claimed that moral imbeciles "should be treated in a class apart in buildings by themselves, as they affect the methods of living and training of the rest."† Dr. Jules Morel has, in a recent communication to the Medico-Psychological Association,‡ advocated the establishment of special institutions, intermediate between Reformatories and Asylums, wherein "such persons

* "Proc. Association, Amer. Institution for Idiotic and Feeble-minded Persons," 1894, p. 400.

† "Forty-first Annual Report Pennsylvania Training School." Philadelphia, 1893.

‡ "Journal of Mental Science," vol. xl., p. 599.

should be objects of prophylactic treatment against crime."

There is need for caution in the charitable provision for the mentally-feeble class that *egoism*, which often springs from the solitary instincts of this class, be not pandered to, but rather that altruistic views should be enforced. The golden rule that even the feeble-minded should "do unto others as they would be done by" should be inculcated; and happily such persons are often susceptible not only to moral but to religious influences. Their very simplicity leaves them to accept without hesitation ideas of a Universal Father, who is at the same time an all-seeing God, of a loving Saviour, and of a sanctifying Spirit; and however imperfect may be their comprehension of these mysteries, there is no doubt that such notions tend to exert a wholesome restraining influence upon conduct. It is not our intention here to discuss the importance of religious teaching as the foundation of moral training; but no one who has had large and intimate experience of mentally-deficient children will deny that in many the religious sense is not wanting. In this connexion we are tempted to quote from the letter to his sister of an athetotic imbecile formerly in the Royal Albert Asylum, a letter written unprompted and unassisted. Referring to the Sunday Service the poor lad writes:—

"How beautiful it is to think of our dear Saviour who loved us all. He knows that I could not do anything for our dear Lord,

and it makes me happy to think about Him and to sing about Him as well. We must pray to God to make people happy in our dear Lord and Saviour, and the Holy Spirit." . . . .

We venture also in conclusion to quote from the testimony of a former Teacher describing the closing scene of the life of a pupil who verged upon the type of moral imbecility. She says:—

"The dear little fellow, once all life and mischief, the *tormenting pupil* of my first school, was dying of consumption. Almost every night he called the Chief Attendant to 'hear his prayers,' giving as his reason that 'his Papa told him not to forget them.' At last, through increasing weakness, he could but lay his feeble hands within those of Mr. M. and listen while he repeated the Lord's Prayer . . . . . One Sunday, as we were watching by his bedside, there came a sudden change; the end was evidently near, as we sent to the doctor to inform him. Turning towards us with placid face, though with fast glazing eyes, the poor boy tried to raise himself in bed, then he stretched forth his wasted fingers, as if feeling for something. 'Where is God?' he exclaimed, 'I want to find God! I want to go to God.' Soon he fell back upon his pillow, and in a few minutes his Spirit returned to God who gave it."

CHAPTER IX.

Results and Conclusions.

In this closing chapter we propose to discuss the results which have accrued from the system of treatment and training we have endeavoured to describe, and to formulate some conclusions as to the value of the work.

"Once an idiot always an idiot" was for many ages the received doctrine on the subject, and we need not be surprised to find that this view still lingers with many otherwise well-informed people, who are not conversant with what has been done during the last fifty years to ameliorate the condition of mentally-deficient children. Even Esquirol himself had, previous to Seguin's triumphant labours, penned these desponding words:—"Idiots are what they must remain for the rest of their life; everything in them betrays an organisation imperfect or arrested in its development. We do not entertain the idea of its being possible to change this condition. No means are known by which a large amount of reason and intelligence, even for the briefest period, can be bestowed upon the unhappy idiot." Such pessimism, applied as it was to all grades of congenital defect—at that time comprehended in

the French term *idiotie*—was happily soon proved to be quite uncalled for. In 1843 we find the elder Voisin, in a paper read before the French Academy of Medicine, referring in terms of warm appreciation to Seguin's studies and successes. "While we are speaking," says he, "of the men who have occupied themselves with idiots, we should not fail to mention here with some distinction, M. Seguin . . . . . appointed director of our idiot asylum at Bicêtre . . . . Already in 1838, and since, he has published the result of his efforts on behalf of a certain number of pupils, whose condition he has favourably modified." And Seguin himself writing, after thirty years experience of this special work, says*:—"Idiots have been improved, educated, and even cured; not one in a thousand has been entirely refractory to treatment; not one in a hundred who has not been made more happy and healthy; more than thirty per cent. have been taught to conform to moral and social law, and rendered capable of order, of good feeling, and of working like the third of a man: more than forty per cent. have become capable of the ordinary transactions of life under friendly control, of understanding moral and social abstractions, of working like two-thirds of a man, and twenty-five to thirty per cent. have come nearer and nearer the standard of manhood, till some of them will defy the scrutiny of good

* "Idiocy and its Treatment by the Physiological Method," New York, 1866.

judges when compared with ordinary young men and women."

The experience of institutions for training youthful idiots and imbeciles both in this country and in America (so far as it extends) goes to confirm the accuracy of Seguin's view on this subject. The statistics of the Royal Albert Asylum, Lancaster, with regard to the after-career of pupils discharged on completion of their seven years' training, showed that ten per cent. were, or had been, earning wages; that five per cent. were remuneratively employed at home; and that 3·5 per cent., in addition, were capable of earning wages if suitable situations could be found for them. About twenty-two per cent. were reported to be more or less useful to their friends at home, while another twenty-two per cent. were said to be of little or no use; twenty-nine per cent. had gravitated to workhouses and lunatic asylums; the remainder (8·5 per cent.) had died. It must not, however, be imagined that even the best of the above were in all respects equal to persons of average intelligence. Some residual peculiarity usually remains to handicap the feeble-minded in the race of life.

"It is not indeed to be expected that without some form of tutelage even the trained imbecile can hold his own in the outside world, and in the majority of cases it may be appropriately said:—

> 'Tis not enough to help the feeble up,
> But to support him after."*

* "27th Annual Report, Royal Albert Asylum," p. 40.

There is no doubt, however, that such support is rendered infinitely easier by methodical training, and the burden to the friends much lighter.

With regard to American experiences we will quote from the paper of Dr. Walter E. Fernald, previously cited. He says*:—"Each year a certain number of persons (trained in industrial work) go out from these institutions [for the feeble-minded] and lead useful, harmless lives. Some of the institutions where only the brightest class of imbeciles are received, and where the system of industrial training has been very carefully carried out, report that from twenty to thirty per cent. of the pupils are discharged as absolutely self-supporting. In other institutions, where the lower grade cases are received, the percentage of cases so discharged is considerably less. It is safe to say that not over ten to fifteen per cent. of our inmates can be made self-supporting, in the sense of going out into the community and securing and retaining a situation, and prudently spending their earnings. With all our training we cannot give our pupils that indispensable something known as good, plain *common sense.* The amount and value of their labour depend upon the amount of oversight and supervision practicable. But it is safe to say that over fifty per cent. of the adults of the higher grade who have been under training from childhood are capable, under intelligent supervision, of doing a sufficient

* *Op. cit.*, p. 17.

amount of work to pay for the actual cost of their support, whether in an institution or at home."

We must not, however, conclude that the benefits of training are merely to be measured by appraising the proportion of those able to earn their own living. This of course is a positive gain, but there are many which we may call negative, hardly less appreciated by those on whom the care of the mentally-deficient falls. That a child should no longer be uncleanly, mischievous or destructive in habits; that it should cease to disturb the peace of the household by discordant cries, and by untimely wanderings, are points which parents thankfully recognise; and if in addition it can be taught to undress and dress itself, to feed itself and to behave with propriety, these results are by no means despicable, even from the economical point of view. It must not be forgotten that the charge of an untrained idiot at home usually monopolises the time of one of older members of the family, who is thus prevented from earning wages; and without *judicious* training and discipline deterioration is pretty sure to occur. Even in the best regulated families the care of a defective child is a constant anxiety; how much more in the labourer's cottage, where oftentimes only casual attention can be given it? The relief to parents afforded by Institution treatment is well illustrated in the Report for 1894 of the Superintendent of the Eastern Counties Asylum. He gives a striking example of a mischiev-

ous imbecile, who "describes with great glee how (before admission) he was left to mind the baby and blacked its face all over with soot, so that when his mother returned she might think she had a black baby; how his little sister wanted some water and he told her to drink out of the kettle on the fire, by which she nearly lost her life; and how he was turned out of the Parish Church, during service, for pricking a boy with a pin, so that he yelled out and disturbed the whole congregation!"

In the same Report* reference is made to the desirability of continued kindly supervision even of cases discharged capable of earning their own living. "On sending them out into the world," (says Mr. Turner) "they are looked on as fully responsible for their actions, although their power of reasoning is undoubtedly defective. One of our old boys who had been steadily earning his living for the last two years, and against whom there had been no complaint, was sent by his master to take up potatoes in his shepherd's garden. The shepherd's wife gave him some home-made wine early in the morning, and afterwards locked the door and hung up the key within reach, telling him that she was going out for the day. Knowing him as I did, it seemed to me the most natural thing in the world for him to take the key and help himself to more wine,

* "Eastern Counties Asylum for Idiots, 36th Annual Report," 1895, p. 45.

and afterwards to some money lying in a drawer. When the woman returned at night and was told by her neighbours what had occurred, the lad was charged with house-breaking, and no consideration was shown to him, although it was known that he had been for six years the inmate of an idiot asylum. Fortunately the magistrates dismissed the case, and his master was kind enough to take him back, saying that he was as good a workman as he wanted." For improved cases, able to take situations on leaving Training Institutions, it seems very desirable that there should be some organisation of philanthropic persons willing to keep a friendly eye on such, something after the plan pursued by the Girl's Friendly Society with regard to servants, or the "Fürsorge" system exercised in Saxony with regard to those discharged from training institutions for the blind. It having been found that many of the pupils of the latter who had been taught a trade were still so far handicapped by their affliction as to be incapable of competing in the open market, an organisation was arranged whereby a trustworthy person resident in the place of employment of the pupil, undertook to give kindly aid and supervision, and to report to the Institution in the event of arrangements not proving satisfactory. This plan works so well that the Royal Commissioners on the Blind, &c, remark as a practical result that "during their tour they saw no blind beggars in Saxony, and were informed that beg-

ging on the part of the blind had practically ceased to exist."

Notwithstanding all drawbacks, we have known some remarkable instances of permanent improvement resulting from training. One of our former pupils, an example of the class now designated "mentally-feeble" as distinguished from imbecile, though for a period an inmate of the Royal Albert Asylum, became, under instruction, an expert joiner, and (what was even more remarkable) from being a very imp of mischief, grew up into a well-conducted, self-reliant youth, and ultimately emigrated to one of our colonies. When we last heard of him he was practising his trade in a leading city, and in a letter home reported himself as doing well, business being brisk in consequence of a conflagration which had recently occurred! In another instance, we encountered in the streets of a northern town a young woman of "considerable personal attractions," whom we did not at first recognise as an old patient—(her's had been a case of mild traumatic imbecility)—but who informed us that she was happily married to a respectable artisan; and certainly she had quite the appearance of a tidy housewife, for which she would be well qualified by her institution training.

It is remarkable that of near a thousand discharged patients who had passed under observation, the two just mentioned are the only instances in which we have known marriages occur. It has indeed been urged as an objec-

tion to educating mentally-deficient children, and fitting them for work in the world, that they would be thereby encouraged to marry, and in consequence there would be a risk of multiplying mental defect in the progeny. Our experience, however, lends no support to this view. In one case, that of a youth who, after a term of institution training, had become an industrious labourer, and was earning eighteen shillings a weeks, we ventured to ventilate the subject. The young man had been telling us how, in addition to paying for his board, he had been able to accumulate a fair amount in the Post Office Savings Bank. "Well," we suggested, tentatively, "perhaps you are saving up against getting married." "Nay, nay, doctor," was the reply, "its hard enough for a feller to keep hisself, let alone bothering with a girl!" Such philosophy as this is rarely met with in the social class to which this youth belongs, or we should hear less of improvident marriages. The effect of judicious training seems to be to impress upon the improved imbecile that he is not quite like other men, and must not undertake the responsibilities of married life. Certainly the net result of training is to diminish the risk of transmitting the evil to another generation, inasmuch as moral principles are instilled which have a restraining influence on conduct. Moreover the very fact of healthy occupation tends to keep in check the animal passions, which are apt to run riot when the adolescent imbecile

is unemployed. This is one, amongst other reasons, for the establishment of small industrial homes (like those founded by the Metropolitan Association for Befriending Young Servants) for feeble-minded young women; and which might with advantage also be established for the other sex.

We have elsewhere* insisted upon the duty incumbent on our County Councils to make specific provision—apart from lunatic asylums—for young imbeciles; and we do this not only from the philanthropic, but also from the economical, point of view. Miss Louisa Twining, from her experience as a guardian, urges that they should establish "asylums sufficient for the needs, not only of pauper children, but of others who by timely training might be saved from becoming life-long burdens on the rates."† Dr. Rhodes, Chairman of the Chorlton Board of Guardians (Manchester), points out that‡ "the want of proper provision for these cases throws a very heavy burden upon the poor-rate. Returns obtained from the various boards of guardians show that in one year 715 weak-minded women passed through 105 workhouses, and at 56 workhouses it was stated that 366 of these women were living immoral lives!"

The appropriate treatment of the mentally-

* "Lancet," 1895, vol. i., pp. 838, 893, *et seq.*

† "Lancet," 1895, vol. i., p. 1017.

‡ "Lancet," 1895, p. 1082.

feeble (or feeble-minded) class as distinguished from idiots and imbeciles is a question which has of late years been much discussed from several points of view.

It is, however, only fair to recall the fact that so long ago as 1846, Seguin included in his book (to which reference has previously been made) the treatment not only of idiots but of backward children (*Enfants arriérés, ou retardés dans leur développement, agités de mouvements involontaires, débiles, muets, non-sourds, &c.*"); and that some of the cases, the successful training of which he records, are of the mentally-feeble type. It is not always recognised that the so-called "Idiot Asylums" have also served the purpose of boarding-schools for children merely weak in mind—a department of their work which has been facilitated by the passing, in 1886, of a special Act, taking them out of the category of Lunatic Asylums, and giving facilities for the admission of pupils by substituting a simple form of certificate for those previously required under the Lunacy Acts. The question, however, of providing special instruction for exceptional children in elementary day-schools came to the surface in a discussion on a paper by the author read before the School Conference of the International Health Exhibition of 1884,* when he advocated the "establishment in every large centre of a school for the backward

* "Health Exhibition Literature," vol. xi., p. 560. Clowes and Sons, 1884.

children, who were not able to bear the strain of the ordinary schooling." In January, and again in April, 1888,* reference was made in the "Journal of Mental Science" to the so-called "auxiliary classes" in Germany and elsewhere; and it was urged that the example should be followed in England for "intermediate cases of mental feebleness." At the Glasgow Meeting of the British Medical Association in 1888, a Committee was formed in the section of Psychology to investigate the condition of school children, and the work of this Committee, afterwards strengthened by representatives of the Charity Organisation Society, the Sanitary Institute, and other bodies, has been going on (thanks to the indefatigable energy of Dr. Warner) up to the present time. The first practical step in the way of providing separate classes for the feeble-minded was taken by the Leicester School Board in April, 1892; and, as we have already seen,† the School Board for London assented in March, 1891, to the proposal previously made by General Moberly (the present Vice-Chairman) to establish "schools for special instruction." Mrs. Burgwin, reporting in March, 1894, with reference to the progress of her classes (which were established in July, 1892), states that they supply a long-felt want, "and one of the most encouraging aids in the work is

* See remarks by author in "Journal of Mental Science," vol. xxxiv., p. 80.

† Page 17.

the growing confidence of the parents." She refers to some scholars, who, after the examination, have returned to the senior departments; and Her Majesty's Inspector states that the success and progress of the work far surpassed his most sanguine anticipations. Even where marked progress had not been made in the "three R's," the result of manual training had frequently been satisfactory, and at the least many of the children had made notable improvement physically, especially as regards cleanliness of person and habits.

As has been well remarked in a recent communication to the "Times,"*—"To the outsider, to whom a large proportion of these children appear hopelessly feeble, the expertness and skill with which they do various kinds of needlework, caning, and other industries, is not less striking than the skill and patience manifested by the teachers, and the gratifying result in the shape of visible improvement, both mentally and physically, that is achieved by the exercise of these qualities." The judicious selection of teachers has no doubt been a most important element of success, and the superintendent is to be congratulated on having gathered around her an efficient band of helpers, who take a real interest in their charges. We are glad to learn that the School Board have recognised the arduous character of the work by offering a somewhat higher rate of payment for

* "A new branch of School Board Work," p. 90. *Times*, April 28th, 1895.

these than for the ordinary teachers. We would venture to suggest that, in order still further to promote the scientific study of the peculiarities of their pupils, facilities should be afforded them to attend lectures on the points of physiology and psychology which would be specially helpful to them.

By the kindness of Mrs. Burgwin, we are enabled to give some instances of recent progress. As showing the practical results achieved, she mentions that after two years training in the special classes, during which much improvement had been observed in power of attention and memory, 24 girls were sent to attend Cookery and Laundry classes, and the Instructor in each department reported that they took great pains with their work, evidently doing it *con amore*. Many children who appeared quite helpless when admitted to the classes, and were very inattentive to instruction, have so much improved in self-reliance and obedience as to justify the hope that by-and-by they will be able (at least partially) to get their own living. Two girls, formerly physically weak and very dull, will go to dressmaking, having learned in the special classes plain and fancy needlework, in which they now excel. At the present time one boy, mentally weak though physically strong, is, after a course of training, contributing to his own living by assisting a blacksmith. Minor degrees of improvement, such as sleeping better, being less troublesome at

home, and looking forward with pleasure to going to school, are thankfully noted by parents of children in the classes. These latter results, even if insignificant from the educational point of view, add in the aggregate very materially to the happiness both of pupils and parents; and it must not be forgotten that the system of special classes is, even in London, yet in its infancy.

The increasing attention paid to secondary education, beneficial as it may be for clever children, is probably not without its disadvantages to the "dullards," who are apt to be regarded not only as a drag on progress, but also (from the mere commercial point of view) as a drug in the market. At either end of some of our more ambitious elementary schools, we see two groups of children between whom there is a great gulf fixed: those in the extra standard ("Ex 7") at the head; those in standard "O" at the tail. For the former, money is lavished in apparatus and teaching power: for the latter, it would seem too often thought that anything is good enough. So we sometimes come across, in an otherwise well-appointed school, the melancholy spectacle of a concourse of children of very varying age and of very different mental and physical condition congregated in a common class-room, branded as failures. Instead of extra teaching-power being assigned to cope with the difficulties of the situation, we have seen a single teacher in charge of about 60 pupils, struggling manfully with this

unpromising mass. Educational progress was of course under such circumstances out of the question; and considering that there are notable instances of dull boys and girls growing up into bright men and women, and that slow mental development sometimes even blossoms into genius (as in the cases of Sir Walter Scott and Dr. Darwin), such a false economy cannot be too severely reprehended. Dr. Warner has, indeed, proposed (and the recommendation is one that has commanded the assent of the Committee who with him have conducted the enquiry on the mental and physical condition of school children), that whenever a special grant of public money is made for the purpose of promoting higher education in elementary schools, a proportionate sum should also be set aside for the additional expense of trying to elevate the lowest stratum. The time is happily past for accepting the doctrine that because the standard attainable by mentally-deficient children is a low one, the attainments and teaching-powers of their instructors need be but low; the fact being that, in order to penetrate the dark recesses of the feeble mind, singularly lucid teaching is requisite, and a philosophical power of simplification of instruction, and of adaptation of methods to the individual peculiarities of pupils.

Of the results attained in the working-homes for feeble-minded adolescent girls, it must suffice to say that they have fully justified their estab-

lishment, and that in each a considerable portion of income is derived from payments for the work of the inmates. Thus at Hitchin an average of 20 girls earn no less than £228 per annum, by washing and needlework, towards their own maintenance. From the Second Annual Report of this Institution (Scott House) we learn that "one girl has gone to service as a laundry-maid in a gentleman's family where she is doing well; one has been removed by friends of her family who are in a position to take good care of her; one has been sent away for misconduct; and one developed symptoms which necessitated her removal to an asylum."

It is to be regretted that, so far, efforts to establish similar working-homes for feeble-minded male adolescents (notably one which the Waifs' and Strays' Society are willing to undertake if funds be forthcoming) have not been successful. While feeble-minded girls specially require protection from themselves and from the world—(where unhappily they too often fall a prey to evil-minded men, and become mothers of an imbecile progeny)—there is no doubt that there are a large number of youths, who are mentally incapacitated from earning their own living unassisted, and who are yet so far intelligent as to be ineligible for any asylum for the imbecile or insane. Under judicious guidance and with favourable surroundings, they would, however, if employed in market-gardening or some simple

handicraft, contribute to their own maintenance; and the segregation of those afflicted with feeble-mindedness in special homes would tend to diminish the evil in the next generation.

In the Metropolitan District it has been found necessary to supplement the school establishment by a custodial branch intermediate between that and the adult asylum for Imbeciles; and in this the inmates have the opportunity of carrying on the industries which they have been taught. Similar custodial departments have been established in connexion with several of the American Schools for Feeble-minded; the protection of adolescent women being specially provided for. With regard to the Custodial Department of the Massachusetts Institution, Dr. Fernald, the Superintendent, writes "Many of these large girls are perfectly capable of self-support under competent direction, who would be utterly incapable and useless without it."* Thus whether we look at the matter from the point of view of philanthropy, or from that of social economy, we think the movement for providing working-homes for feeble-minded young people well worthy of support.

An objection has, indeed, been taken to the several measures that have during the last half century been devised in the interests of the mentally-deficient, that they are antagonistic

* "Forty-fourth Annual Report, Mass. School for Feeble-minded."

to Nature's own law which is expressed in the formula "the survival of the fittest." We have already stated facts (page 111) which militate against this theory, and the benevolent schemes just referred to are additional safe-guards against the transmission of inherited mental defect to another generation. It is not denied that individual lives, which, if left to themselves, would probably be extinguished in the struggle for existence, are by fostering care prolonged, perhaps contrary to the rigid principles of social economy. After all, much that has been done for the idiot and imbecile, and even for the feeble-minded, can only be justified on the ground of that quality of mercy which is "nobility's true badge," and "blesseth him that gives and him that takes." May we not indeed in this, as in much other philanthropic work which tends to soften the asperities of Nature's laws, endeavour humbly to follow in the footsteps of Him of whom it was foretold that "A bruised reed shall He not break, and smoking flax shall He not quench"?

LATEAT SCINTILLULA FORSAN!

Appendix A.

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Appendix B.

SCHOOL BOOKS AND APPLIANCES SUITABLE FOR SPECIAL INSTRUCTION OF MENTALLY-DEFICIENT CHILDREN.

Pictorial Teaching :—

Dean's Book of Objects.
Gill's Infant Wall-sheets.
Gill's South Kensington Demonstration Sheets.
Newmann's Conversational Wall-Pictures.
Newmann's Elementary Diagrams for Conversational Lessons.
Newmann's Sliced Pictures.
Blackie's Pictures for School-decoration and Object-lessons.
Landseer Series of Natural History (*A. Johnston, London*).
Trade and Object Pictures (*W. and A. K. Johnston, Edin.*).
Picture Cubes.
Child's Bible (Illustrated), (*Cassell and Co.*).
Bible Picture Roll (*Partridge*).

Reading :—

Gill's Regina Reading and Object Lesson Sheets.
Gill's Regina Primer (I. and II.). Coloured.
Meiklejohn's Golden Primer.
Meiklejohn's Readers.
Reading without Tears (*Longmans*).
Reading made Easy, *Anna Snell.*
Blackwood's Picture Primers and Wall Sheets.
Nelson's Royal Wall Sheets.
Nelson's Little Primers.
Nelson's Queen Primers.
Nelson's Royal Readers.
Nelson's Star Readers.
New National Reading Books (*National Society*).
Newmann's Pictorial Alphabet.
Newmann's A B C Kindergarten Cubes.
Gill's Single Letters on Cardboard. Coloured.

Reading, Writing, and Drawing :—

Reading made Easy, *Anna Snell.*
Jackson's Vertical Writing Copy-Books.
Darnell's Faint-Outline Copy-Books.
New National Copy-Books.
Gill's Early Steps in Drawing and Reading.
Gill's Kindergarten Drawing Cards.
Brown's Kindergarten Drawing Cards (*Hull*).
Nelson's Royal Drawing Books.
Chequered Slates and Drawing Copies.

Arithmetic :—

Newmann's Arithmetical Pictures.
Blackie's "Vivid" Arithmetic Sheets.
Newmann's "Eclipse" Number Frame.
Newmann's Kindergarten Number House.
Newmann's Brick-box for Calculation (Tillich).
Blackie's Hand and Eye Arithmetic.
Nelson's Royal Arithmetics.
"Fairfax" Bead-Counters, Ball-Frames, Shells, &c.
Gill's Figure Cards (with values).

For Object Lessons :—

Practical Object Lessons (*Cox, London*).
Household Object Lessons (*Cox, London*).
Model Animals (*Newmann*).
Gill's English Coins (Cardboard).
Royal Object Lesson Series (*Nelson*).

For Drill and Physical Exercise :—

Gill's Physical Exercises with Music.
Gill's Military Drill with Music, and other books on Musical Drill.
Alexander's Musical Drill for Infants.
Kindergarten Songs and Games. *Berry and Michaelis.*
James' Imperial Action Songs.
Tanner's Physical Culture (Ling-Swedish System).

For Singing and Articulation:—

Elliott's National Nursery Rhymes.
Gallery Songs with Action, *M. B. Sinclair.*
Little Songs for Little Singers, *A. S. Gatty.*
Curwen's Infant School Songs.
Music for the Kindergarten, *E. Heerwart.*

Geography:—

Nelson's Royal Atlas Readers.
Nelson's The World at Home.
Newmann's Maps for Pricking and Embroidering.
Sand Tray for making Relief Maps.

History:—

Nelson's Royal England Readers.

Miscellaneous:—

Children's Art Colour Books, *e.g.*, "A Day in the Country" (*Nister, London*).

Works on Kindergarten System:—

The Kindergarten Principle, *M. Lyschinska.*
The Kindergarten, *Madame von Bulow.*
The Kindergarten at Home, *A. E. Shireff.*
Toy-teaching and Play-learning (*Ward, Lock and Co.*).
Stewart's Kindergarten Manual.

Kindergarten Occupations:—

Bead Pictures on Chequered Perforated Boards (*Newmann*).
Pictures for Pricking and Sewing (*Penelope Series, Cox*).
Kindergarten Bricks, Coloured Tiles.
Kindergarten Parquetry (*Newmann*).
Materials at various Kindergarten Depots.

Manual Training:—

Hand and Eye Training, *G. Ricks, B.Sc.*
First Lessons in Training, *Gustav Kalb.*
Teacher's Handbook of Slojd, *Otto Salomon.*
Slojd Diagrams (Leipsic), *Miss Bury.*
Weldon's Macramé Work.
Gill's Illustrations of Trades.
Dissected Puzzle Pictures and Maps.

SPEAKING EXERCISE.—I. CONSONANTS.

SOUND.	PHONETIC.	COMMON OBJECT.
M.	Mam-ma	Mat, Man, Miss
P.	Pa-pa	Pen, Pin, Pipe
B.	Bab-ba	Bell, Box, Book
T.	Tat-ta	Table, Top, Tea
D.	Dad-da	Door, Doll, Desk
V.	Va-va	Velvet, View, Violet
F.	Fa-fa	Fan, Fire, Fish
L.	La-la	Lad, Lady, Lock
R.	Ra-ree	Rag, Reel, Rail-road
S.	See-saw	Soap, Slate, Seat
Z.	*Z*a-zel	*Z*inc, Scissors
Th.	The	Thimble, Thing
Sh.	She	Shell, Shilling
Ch.	Chick	Child, Chair
J.	Jig	Ju-jube, Jug
G. (hard.)	Gig.	Girl, Gas, Gate
K.	Cake	Cat, Kite, Colour
N.	Nanny	Net; Nut, (K)not

II. SIMPLE

VOWEL SOUND.	EXAMPLES.
A (open) = (Ah)	Father.
A (broad) = (Aw)	All (*Aw*ful)
A (short) = Ă	Cap, Tap
A (long) = Ā	Cape, Tape
O (short) = Ŏ	Cot, Knot
O (long) = Ō	Coat, Note
o͝o (short) = (o͝o)	Foot, Wood
o͞o (long) = (o͞o)	Boot, Food

(Arranged by Dr. Shuttleworth for use at Royal Albert Asylum. Reprinted *of Psychological Medicine*, by kind

Part of Body, &c.	Part of Dress, &c.
Mouth, Muscle	Muff, Muffler, Mitten
Palm (of hand)	Pin, Pocket
Bone, Bust, Brains	Bib, Bow
Toe, Tooth	Tie, Tape, Trousers
Dimple	Dress, Diadem
Vein, Voice	Veil, Vest
Foot, Face, Finger	Fur, Frock, Flannel
Lip, Limb, Leg	Lace, (E)lastic
Rib, (W)rist	Ribbon, Ring
Sole, Skin	Sock, Sash, Stocking
Hazel (Eyes)	Stays, Zone
Thumb, Throat	Thread
Shoulders, Shin	Shoe, Shawl, Shirt
Chin, Chest, Cheek	Chain (of Watch)
Jaw, Joint	Jacket, Jewel
Gum, Gullet	Garter, Gaiter
Calf, Cough	Coat, Cap, Collar
Nose, Nail, Neck	Necktie, (Knot)

Vowel Sounds.

Vowel Sound.	Examples.
U (short) = $\breve{U}$	Tun, Fun
U (long) = $\bar{U}$	Tune, Fume
E (short) = $\breve{E}$	Bed, Fed
E (long) = $\bar{E}$	Bead, Feed
I (short) = $\breve{I}$	Bit, Fit
I (long) = $\bar{I}$	Bite, Fight
Aspirate H	Hat, Hall
Double Letters W, Y	Wall, You
Diphthongs, $\widehat{OI}$, $\widehat{OW}$	Oil, Owl

from his article on Education of Imbeciles in Dr. Hack Tuke's *Dictionary* permission of Messrs. Churchill).

APPENDIX D.

TRAINING INSTITUTIONS IN GREAT BRITAIN AND IRELAND FOR MENTALLY-DEFICIENT CHILDREN.

A. FOR PAUPER CHILDREN:—

1. Metropolitan Asylums Board. *Darenth Schools*, Dartford, Kent.
2. Separate Department at *Northampton County Asylum*, Berrywood.
3. *Western Counties Idiot Asylum*, Starcross, Devon. (Also receives cases on payment, and aided by charity).

A limited number of pauper patients (from their own districts) are also received at the *Royal Albert* and *Eastern Counties Asylums*.

B. FOR CHILDREN ABOVE PAUPER CLASS:—

I. **Charitable Institutions receiving also paying cases.**

1. *Earlswood Asylum*, Red Hill, Surrey.
2. *Royal Albert Asylum* and *Brunton House Branch*, Lancaster.
3. *Eastern Counties Asylum*, Colchester.
4. *Western Counties Idiot Asylum*, Starcross.
5. *Midland Counties Idiot Asylum*, Knowle, Birmingham.
6. *Magdalen Hospital*, Bath.
7. *Scottish National Institution for the Education of Imbecile Children*, Larbert, Stirlingshire.
8. *Baldovan Asylum for Imbecile Children*, near Dundee.
9. *Stewart Institution for Idiotic and Imbecile Children*, Palmerston, Dublin.

II. **Private Establishments, registered under "Idiots' Act, 1886."**

1. *Normansfield*, Hampton Wick, Middlesex.
2. *Downside Lodge*, Chilcompton, Bath.

C. Establishments for Feeble-minded Persons, and Mentally-feeble Children.

I. **For Feeble-minded Adolescent Girls (certified under Act 25 and 26 Vic., cap. 43, as Industrial Homes for Paupers).**

1. *Scott House*, The Triangle, Hitchin.
2. *The Aubert Park Home*, 48 Highbury Park, N.
3. *The Laundry and Homes of Industry*, Burnt Green, near Birmingham.
4. *Chasefield*, Fishponds, Bristol.
5. *St. Mary's Home*, Painswick, Gloucestershire.
6. *Adcote*, Pilch Lane, Knotty Ash, Liverpool.

II. **Private Educational Homes for Backward and Mentally-feeble Children (not certified).**

1. *Ancaster House*,* Richmond Hill, Surrey.
2. *Bearsted House*, near Maidstone, Kent.
3. *Grosvenor*, Auckland Road, Upper Norwood.
4. *Mavisbush*,* Poulton, Midlothian, N.B.
5. *Winchester House*,* Kingston Hill, Surrey.

* Under Medical Management.

D. School-Board Classes for Special Instruction of Feeble-Minded Children.

London (First Class opened July, 1892). **Centres and Schools.**

Chelsea: Park Walk, St. Dunstan's Road.
Clerkenwell: Chequer Alley.
Finsbury: Bath Street, Hugh Myddleton, Edward Street.
Hackney: Maidstone Street, Newcastle Street, Summerfield Street.
Lambeth, East: Danby Street, Sayer Street.
Southwark: Snowfields, Pocock Street.
Tower Hamlets: British Street, Broad Street.

Leicester (First Class opened April, 1892).
Birmingham (First Class opened 1894).
Brighton (First Class opened 1895).

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